This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

56th Congress, 2d Session. } HOUSE OF REPRESENTATIVES. { Document No. 5.

ANNUAL REPORTS

OF THE

DEPARTMENT OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1900.

MISCELLANEOUS REPORTS.

PART II.

GOVERNORS OF TERRITORIES, ETC.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1900.

LIBRARY
Leland Stanford, Jr.
UNIVERSITY

a 61336

CONTENTS.

[Index to the several reports at end of volume.]

Page.

Report of the Governor of Alaska 5

Report of the Governor of Arizona 71

Report of the Governor of New Mexico 133

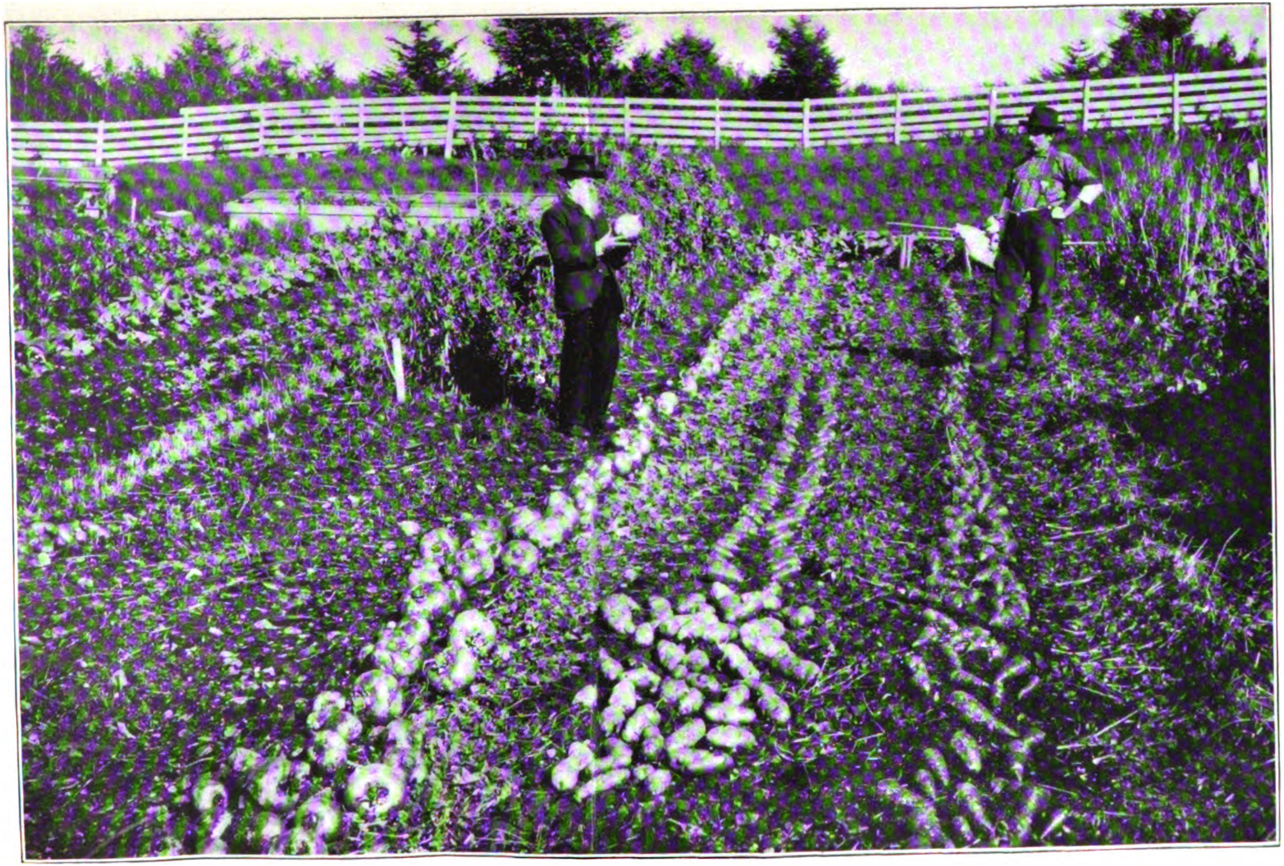
Report of the Governor of Oklahoma 577

Report of the Governor of Hawaii 689

Report of the Commissioner of the Interior for Porto Rico 713

Report of the Commissioner of Education for Porto Rico 743

U.S. 18F02



HUGH PATTON'S VEGETABLE GARDEN, SITKA, ALASKA.

REPORT

OF

THE GOVERNOR OF ALASKA.

Executive Office,
Sitka, Alaska, October 15, 1900.

Sir: I have the honor to transmit herewith my annual report on affairs in Alaska for 1900.

LAWS FOR ALASKA.

This district is now blessed with a body of good laws. The "Act to define and punish crimes in the district of Alaska and to provide a code of criminal procedure for said district," approved March 3, 1899, has been in operation since July 1, 1899. A large criminal docket has been disposed of under the provisions of this code, and all know that the courts can administer justice legally. Objection has been made to the provisions in section 460 requiring business men and traders to take out licenses. Some are disposed to question the law, as they assert that it is unconstitutional, while most who pay it would like to have provisions made for spending it all within the district and not send it to the general fund at Washington. This has been partially brought about by a provision in section 203, chapter 21, on the incorporation of the towns in the "Act making further provision for a civil government for Alaska and for other purposes," approved June 6, 1900. Fifty per cent of the whole sum collected within each corporation is to be used for school purposes under the direction of the council.

This act makes provisions for two additional courts. The district is to be divided into three divisions. In Division No. 1, the judge resides at Juneau; in Division No. 2, at St. Michael; in Division No. 3, at Eagle City. Section 13 of title 1 provides that "The judges of the district, or a majority of them, shall, as soon as practicable after their appointment, meet, and by appropriate order, to be thereafter entered in each division of the court, divide the district into three recording divisions, designate the division of the court to supervise each and also define the boundaries thereof by reference to natural objects and permanent landmarks or monuments in such manner that the boundaries of each recording division can be readily determined and become generally known from such description, which order shall be given publicity in such manner by posting, publication, or otherwise as the judges or any division of the court may direct." On account of the urgent necessity for the judges who were assigned to divisions 2 and 3 to get to their locations at the earliest moment and put their courts in operation, there was no meeting of the judges to carry out what is provided in this section. There may possibly be some confusion until the judges can meet and make the division. The official register of the district, as accurately as it is possible to make out now—for the judges are appointing commissioners right along—is as follows:

Governor.—J. G. Brady.

United States judges.—Melville C. Brown, Division No. 1, Juneau; Arthur H. Noyes, Division No. 2, St. Michael; James Wickersham, Division No. 3, Eagle City.

United States attorneys.—Robert A. Friedrich, Division No. 1, Juneau; Joseph K. Wood, Division No. 2, St Michael; A. M. Post, Division No. 3, Eagle City.

Clerks.—W. J. Hill, Division No. 1; George V. Borchsenius, Division No. 2; A. R. Heilig, Division No. 3.

United States marshals.—James M. Shoup, Division No. 1; Cornelius L. Vawter, Division No. 2; G. G. Perry, Division No. 3.

Commissioners.—Edward de Groff, Sitka; Hiram H. Folsom, Juneau; F. P. Tustin, Wrangell; L. R. Woodward, Unalaska; Phillip Gallaher, Kadiak; C. A. Shelbrede, Skagway; W. J. Jones, Circle City; Charles H. Isham, Unga; Lenox B. Shepherd, St. Michael; Sol. Ripinsky, Haines; J. P. Smith, Ketchikan; L. R. Gillette, Douglas.

Deputy marshals.—Division No. 1. W. H. McNair, Sitka; J. W. Snook, Sitka; W. S. Staley, Juneau; William D. Grant, Wrangell; John McElheny, Douglas Island; Edward C. Hasey, Kadiak; Lewis L. Boweers, Unga; James C. Blaine, Unalaska; Josias M. Tanner, Skagway.

United States land officers.—Surveyor-general, W. L. Distin, Sitka; register, John W. Dudley, Sitka; receiver, A. J. Apperson, Sitka; clerks, Clinton Gurnee, Sitka; G. W. Stowell, Sitka.

United States deputy mineral surveyors.—William G. Atwood, Rampart City; George M. Ashford, Nome; Nathan E. Beckwith; George E. Baldwin, Valdez; Arthur G. Blake, Nome; H. Tilly Browne, Nome; Will S. Bliss, Nome; J. F. Bleakley, Nome; Warren V. Clark, jr.; E. J. Chamberlain, Eagle City; W. S. Chapman, Nome; H. Smith Clyde, Nome; Charles E. Davidson, Nome; James M. Davidson, Nome; John C. Des Granger, Council City; Langdon C. Easton; Henry H. Edgerton, jr., Nome; David Fox, jr., Nome; Francis B. Flood, Nome; George W. Garside, Juneau; Charles W. Garside, Nome; Thomas H. George, Nome; Henry D. Green, Valdez; Albro Gardner; Lloyd G. Hill, Juneau; Paul Heinze, Nome; Hermann Heinze, Nome; Ward M. Jones; Albert Lascy, Nome; Sidney J. Marquid; Clarance A. Miller, Nome; James L. McPherson; A. E. Nickerson, Dawson, N. W. T.; Gelo. F. Parker, Skagway; George S. Pershin, Nome; Homer C. Parker, Council City; Addison M. Powell, Valdez; Paul Ricker; James E. Sneveley, Eagle City; Amasa Sprig, jr., Nome; Vivian P. Strange; Norman R. Smith, Nome; Francis Tagliabue, Nome; Charles E. Wick, Douglas City; Nathan B. Whitfield, Ketchikan; Robert F. Whitham, Valdez; Stanley J. Willis, Valdez; F. H. Whitworth, Ketchikan.

Deputy surveyors.—William G. Atwood, Rampart City; George M. Ashwood, Nome; George E. Baldwin, Valdez; Arthur G. Blake, Nome; James E. Caustin, Wrangell; E. J. Chamberlain, Eagle City; C. E. Davidson, Juneau; Thomas H. George, Juneau; George W. Garside, Juneau; Clinton Gurnee, jr., Sitka; Charles W. Garside, Nome; Paul Heinze, Nome; Herman Heinze, Nome; Frank H. Lacy; Albert Lascy, Nome; Gelo F. Parker, Skagway; Francis Tagliabue, Nome; Alfred Williams, Skagway; Nathan B. Whitfield, Ketchikan; F. H. Whitworth.

Department of agriculture.—Special agent, C. C. Georgeson; superintendent, Fred E. Rader, Sitka.

Bureau of education.—Agent, Sheldon Jackson; assistant agent, William Hamilton; superintendent of schools, W. A. Kelly.

Internal revenue.—Deputy collector, H. E. Batin, Skagway.

Customs officers.—Collector, J. W. Ivey; special deputy, W. D. McNair, Sitka; deputy collectors, F. E. Bronson, Sitka; John M. Tenny, Juneau; J. H. Causten, Wrangell; John R. Beegle, Ketchikan; Claud B. Cannon, Kadiak; Frederick Sargent, Karluk; J. F. Sinnott, Unga; William Gauntlet, Unalaska: E. T. Hatch, St. Michael; Charles Smith, Circle City; G. A. Waggoner, White Pass; John Goodell, Orca; C. L. Andrews, Skagway; S. T. Penberthy, Homer; H. E. McCarty, Forty Mile; L. P. Wright, Nome.

While this act was on its passage through the House of Representatives there was a determined effort to reduce the number of judges to two. This would have been a great injustice to the people on the

Upper Yukon, who have been waiting for years for a court wherein claims of great value, which are in dispute, might be determined and settled. Judge Wickersham set dates for holding terms at Rampart, Circle, and Eagle. He has a great mining district within his division and his court will find abundance of work throughout the year.

Never was a man sent to fill a more trying position than Judge Arthur H. Noyes is now filling at Cape Nome. Everybody and everything is pellmell. There are several claimants for each town lot, beach claim, and creek claim—25,000 people waiting for the court to open its doors. In what part of the world outside of the United States could so many people assemble together, and under such feeble restraint, be found, and at the same time so well behaved? Men went there to seek fortunes by mining, by trade, and by gambling. All were living at a high pressure of excitement, yet there was but a small number of cases of violence. There was a good list of undesirable characters from all quarters of the globe, but the number of those who love order was far larger than those who rejoice in uproar and anarchy. It speaks well for the home training, and is certainly a fine illustration of our institutions. The officers of Division No. 2 will have enough to keep them constantly employed for a long period. The business transacted within the first three weeks is thus reported by Mr. George V. Borchsenius, the clerk:

The following is a statement of suits filed in the office of the clerk of the United States district court, district of Alaska, second division, and of the moneys received by me as clerk of said court, to and including August 11, 1900, excluding, however, certain moneys deposited with me as such clerk as security for costs or in lieu of a bond, in certain actions pending in said court:

Civil actions	60
Admiralty suits	17
Receipts	$1,823.60
Fees:	
Naturalization	160.00
Liquor license	45,410.00
Mercantile license	1,400.00
Restaurant license	135.00
Cigar-stand license	100.00
Drug-store license	55.00
Admission to bar	10.00
Boarding-house license	15.00
Bank license	250.00
Hotel license	100.00
Physicians' license	50.00
Ships and shipping license	6,581.00
Waterworks license	55.00
Received from George B. Swinehart, United States commissioner	844.90
Total	56,989.50

If it be asked, "Does the recent legislation give adequate protection to life and property in all parts of the district?" the answer would be: No; it does not. The two additional courts and the codes are a great blessing, and all who can enjoy them are thankful. But the whole southern coast, from Unalaska to Yakutat, is without protection, and within this area the population is very considerable and the property interests in fisheries and mines and other industries will amount to millions of dollars. Unalaska is 750 miles from St. Michael, and during a large part of the year no communication can be had between the two places. The same place is 1,300 miles from Juneau, and it requires the present mail steamer about ten days to make the run.

Unalaska is and must remain a strategic point in our possessions on the Pacific. For several weeks in the early summer there was a large number of ocean-going vessels at anchor here and from 8,000 to 12,000 people, yet there was not an officer there who could issue a warrant. Two hundred and fifty miles toward the east is the Shumagin group of islands, where there are several settlements. On Unga Island is located the Apollo Consolidated mine, which has been employing from 150 to 300 men. One hundred and twenty-five miles from Unga is Chignik Bay, on the Alaska Peninsula, where there are canneries which employ hundreds of people. One hundred and seventy-five miles to the eastward is Karluk, upon Kodiak Island, and within a few miles Uyak Bay, where are large canneries employing many people. There are many settlements upon Kodiak Island. North and east of this island is Cook Inlet, where there are a number of settlements. Men are engaged in placer mining, coal mining, salteries, and canneries.

Here it is well to quote a letter recently received at the governor's office:

COOK INLET COAL FIELDS COMPANY,
Homer, Alaska, August 12, 1900.

Governor BRADY, *Sitka.*

SIR: I have the honor to inform you that we are making considerable progress in the construction work of our railroad from the spit to the mines, and have our locomotive running as far as the track has been laid, 3 miles, awaiting the balance of the rails. We are at present employing some 120 people outside of the natives and have made marked development at the mines and in the general construction work. The great trouble we have to contend with is drunkenness. Liquor is sold by certain parties on the spit to our men, and done openly and defying the law, for they have no license, and we are powerless. Outside of these few people, who defy all, no others but our employees live here. I would like you to inform me what can be done in the matter to prevent this illicit sale of liquor (I am informed to the natives as well). The parties possess no license and occupy one of our buildings, and we can not get them out except by brute force. With our community we have no deputy marshal or commissioner, and every time I have been to Juneau to obtain relief of the courts the judge has been away. They tell you here to your face that there is no law in Alaska.

Is there any way we can proceed to secure the conviction of those who defy the law so openly and jeopardize the peace and lives of the community? One of our men was thrown from a wagon under the effects of liquor and had his leg broken recently, and the lives of our men and property and live stock are risked because this defiance of the law is permitted.

We had one of our men appointed last winter to act as deputy marshal, but unfortunately he became addicted to drink as bad as the rest, thus uniting forces, so to speak, or joining hands with the parties in this illicit sale of liquor. As a result he no longer remains in our employ.

Your courteous acknowledgment and advice in this matter to bring these offenders to justice and preserve the good name of temperance for Alaska will be appreciated.

Yours, truly,

ALFRED RAY, *President.*

East of the Kenai Peninsula is Prince William Sound, which bids fair to open up copper mines of great richness upon its shores and to possess the best entry port to the heart of Alaska. Valdez is already a place of much importance. There is a large cannery at Orca and another at Odiak near by. All these people and their property along this immense stretch of coast are left thus without protection. Again, many of these people were here before the territory was ceded by Russia, and article 3 of our treaty with Russia is as follows:

> The inhabitants of the ceded territory, according to their choice, reserving their natural allegiance, may return to Russia within three years; but if they should pre-

> fer to remain in the ceded territory, they, with the exception of uncivilized native tribes, shall be admitted to the enjoyment of all the rights, advantages, and immunities of citizens of the United States, and shall be maintained and protected in the free enjoyment of their liberty, property, and religion. The uncivilized tribes will be subject to such laws and regulations as the United States may, from time to time, adopt in regard to aboriginal tribes of that country.

We have not and are not complying with these solemn obligations. The court in southeast Alaska will be kept busy in adjudicating matters which are constantly presented in this section, and there will be no time for an itinerary along the coast to Unalaska. It requires another court, with headquarters at Valdez or Kodiak, but to make this court efficient and independent it should be furnished with a steam vessel, thoroughly seaworthy and kept in constant readiness. To some this may seem impracticable and too expensive; but Alaska has not been a financial burden to the United States, and the stores of wealth which she has in reserve for those who come here to toil will justify a broad and liberal treatment at the hands of Congress. The weakest part in the "act making further provision for a civil government for Alaska" is the matter of commissioners and deputy marshals. The former are appointed and set aside at the will of the judge. They have an extended jurisdiction, are ex officio justices of the peace, recorders, probate judges, notaries public, have power to grant writs of habeas corpus, and have jurisdiction in civil actions to $1,000. Their courts, therefore, come into intimate contact with the great majority of the people. They should be men of more than ordinary force and intelligence and should be versed in the law. The only compensation for a commissioner or a deputy marshal is from fees, as is provided in section 11.

> An accurate detailed account of all fees received and disbursements made by the commissioners and deputy marshals shall be filed quarterly with the clerk for the proper division of the district court and approved by the judge thereof, if found to be in accordance with law; and all net fees received in excess of the sum of $3,000 per annum by any commissioner or deputy marshal shall be annually paid to the clerk of the proper division of the court and by him paid into the Treasury of the United States, such payment to be accompanied by a verified detailed statement of such deputy or commissioner.

This is so uncertain that men will not, in many places, accept an appointment. They can make more money by working either as a mechanic or a day laborer in the mines. A few places, where there will be much recording, as at Nome and Juneau, may pay the full amount of $3,000 in fees or more. There was not a man in the neighborhood of Unalaska who was willing to apply for the commissionership. He could not be assured that he could earn in fees the cost of his rent and stationery. And yet, as stated above, this is a most important point at which to have an able man who can perform the duties of the office well. Section 30 of the act provides that—

> In case the law requires or authorizes any services to be performed or any act to be done by any official or person within the district of Alaska, and provides no compensation therefor, the Attorney-General may prescribe and promulgate a schedule of such fees, mileage, or other compensation as shall be by him deemed proper for each division of the court, and such schedule shall have the force and effect of law; and the Attorney-General may from time to time amend such schedule and promulgate the same as amended, and the schedule as amended and promulgated shall also have the force and effect of law.

The Attorney-General did, on August 1, 1900, prescribe and promulgate a schedule of fees and instruction to United States marshals, attorneys, clerks, commissioners, and notaries public. The commissioner is to keep all sorts of books and all sorts of accounts, and whatever he does he must never lose sight of his fees; and he must not mix them, for if he does he will borrow trouble. His fees should be entered in the following order:

No. 1. Fees as commissioner and justice of the peace.
No. 2. Fees for services in issuing writs of habeas corpus.
No. 3. Fees as coroner.
No. 4. Fees for services with reference to unclaimed property.
No. 5. Fees for services with reference to ferries.
No. 6. Fees as notary public.
No. 7. Fees as probate judge; and
No. 8. Fees as recorder when designated by a judge of the district court.

LAND LAWS.

The last sentence of section 27 of this new act says: "But nothing contained in this act shall be construed to put in force in the district the general land laws of the United States." This is simply retaining the prohibition contained in section 8 of the organic act of May 17, 1884. When the question is asked why settlers are denied the benefit of the land laws no satisfactory answer can be given. Section 8 of the organic act, mentioned above, contained a proviso "that the Indians or other persons in said district shall not be disturbed in the possession of any lands actually in their use or occupation or now claimed by them, but the terms under which such persons may acquire title to such lands is reserved for future legislation by Congress." As the mining laws and the rights incident thereto were declared to be in full force and effect the above nondisturbance clause was taken as a promise that Congress would in the near future extend the laws, so that titles to lands which are not mineral could be acquired. More than sixteen years have passed and but few have acquired any sort of title. In 1891 Congress manifested a desire to do something, and in an act to repeal timber-culture laws, and for other purposes, which was approved March 3 of that year, sections 11, 12, 13, 14, and 15 pertained to Alaska.

Section 11 provides a way in which to acquire a patent to land for a town site. Up to the present time but one town-site patent has been issued, that of Juneau for 160 acres. Sections 12, 13, and 14 provided a way to get a patent to land for trading and manufacturing purposes. It was some encouragement to those who had been waiting for Congress to grant even this. Many began to move in the matter and made application to the United States marshal, ex officio surveyor-general, for an estimate of field and office work. There were 146 of these applicants and the total amount of money which they deposited was $28,046. A survey was ordered in each case. Some of these complied with the law and regulations thereunder and some did not. Those confirming were approved and those not were sent back for correction or were rejected. There is one thing certain about this act of 1891, that is, after the "regulations provided by the Commissioner of the General Land Office to carry into effect certain provisions for allowing entries of land in Alaska for town-site, trading, and manufacturing purposes," every applicant believed that he could enter as much as 160 acres, if he wanted that much, and that the triplicate certificate of deposit would be receivable in payment to the extent of the amount of such certificate for the land purchased, the surveying of which is paid for out of such deposit, as provided in section 2403 of the Revised Statutes.

The Commissioner of the General Land Office takes a different view.

He holds that it rests with him how much an applicant may be allowed to purchase. In one instance, where an applicant made entry of 160 acres, where the survey had been approved by the local office and at Washington, advertising done, where final entry and proof had been made, and the purchase price had been given and the final receipts of the register and receiver passed to the applicant—in short, where the law and regulations had been complied with and where there was no allegation of irregularity, fraud, or no valid adverse interests, and where the papers had been transmitted to the Commissioner of the General Land Office with a recommendation for patent to issue, he refused to grant the same, informing the applicant that, in his opinion, 20 acres was as large a tract as was necessary for the manufacturing business which he was conducting, indicating where the lines should be run to, including that amount, and cautioning that applicant that if he did not comply with this ruling his entry would be canceled. An appeal was taken to the Secretary. He sustained the ruling of the Commissioner, though in this instance he enlarged the area beyond what the Commissioner allowed. But the Secretary went further and ruled that the triplicate certificate of deposit could not be accepted as payment for the land, but as payment for surveys and office work only; that the approved regulations of June 3, 1891, were in error. Nor was this all. If the applicant elected to make an amended survey, he is practically to begin anew. He is to make application to the surveyor-general, who makes out estimates for cost of field and office work, which he must deposit before the amended survey will be ordered. He can not get credit for any part of the original amount which he has spent.

Such rulings and decisions could not have been anticipated by applicants who thought they saw an opportunity to acquire title to as much as 160 acres of land at $2.50 per acre. Enough has been stated here to convince the Public Land Committees of the Senate and the House that a large measure of injustice has been the result to many—that is, they have spent hundreds of dollars and received nothing in return. If a report of all the entries in detail and what became of them were called for, such information would suggest the proper remedy. The next attempt to do anything for Alaska in the way of land laws is contained in the act approved May 14, 1898, "An act extending the homestead law and providing for right of way for railroads in the District of Alaska, and for other purposes." Although it is more than two years since the act became law, not a single entry has been allowed to a homesteader, for the reason that none of the land has been surveyed and is ready for entry. By act of Congress approved March 3, 1899, the system of public land surveys was extended to Alaska. By the same act $325,000 were appropriated, and it was thought by the friends of Alaska that part of this sum would be apportioned for surveys here, for it expressly provided, "That in the States of California, Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming, the Territory of Arizona, and the district of Alaska, there may be allowed, in the discretion of the Secretary of the Interior, for the survey and resurvey of lands heavily timbered, mountainous, or covered with dense undergrowth, rates not exceeding $25 per linear mile," etc. Yet up to September no surveyor has been on the ground to begin the work, and Alaska, therefore, has received no benefit from that appropriation. A similar amount was appropriated for the year ending June 30, 1901, and one-quarter of the year has passed and we have not heard of any preparation for beginning any sort of surveys whereby the people can make entry. The people are here and waiting.

The law of 1898 allows only 80 acres for a homestead, and alternate eighties along navigable water are reserved. Why? No person can assign any valid reason for tying up one-half of the shore line of Alaska, which is greater than all the rest of the shore line of the United States. Besides "a roadway 60 feet in width, parallel to the shore line as near as may be practicable, shall be reserved for the use of the public as a highway," is a restriction which will cause unnecessary trouble and contention. In places it may not be practicable to run a road within 3 miles of the shore line. This law, as it now stands, lays the ground for endless contention and litigation. Why should there be a departure from the settled policy of granting 160 acres as a homestead? It has been uniformly pursued in all the Territories and has given satisfaction. It will introduce much confusion into the Land Department in trying to keep settlers off these reserved eighties. The courts will now aid in opening the roads where needed. Is it too much for the people of Alaska to ask that they be treated as well as have settlers in other frontiers? Nay, would it not be policy to be more liberal with bona fide settlers for a term of years? Such a policy was not harmful to Oregon. We sometimes forget that the earth is for the living; unborn generations will take care of themselves when they get here.

That part of the law of 1898 allowing the acquisition of title through soldiers' additional homestead rights and forbidding the use of any other kind of scrip was helpful to those lawyers who controlled the scrip, but none of them have made fortunes out of it. The certified pieces went up to $25 and $30 per acre while no uncertified piece has sold for less than $4 per acre. Besides this, applicant must pay the expense of surveying, office work, advertising, attorney's fees, etc. This scrip has been made use of for the most part by the cannery people, who failed or were hampered under the act of 1891. In the Sitka land office, so far, 42 entries with soldiers' additional rights have been made, averaging $15\frac{2}{7}$ acres each. On June 6, 1900, an act was approved which says, "That so much of the public land laws of the United States are hereby extended to the district of Alaska as relate to coal lands, namely, sections 2347 to 2352, inclusive, of the Revised Statutes." This was at the earnest solicitation of those who are endeavoring to open up coal mines and who have already spent large sums in development work. This industry should be encouraged by the Government by reducing the price per acre one-half. The Government should know at as early a date as possible just what can be relied upon from the coal measures in Alaska. Coal now, at Dutch Harbor, from Vancouver Island, is costing the Government $11 per ton. If good steaming coal can be had from the Kenai Peninsula or elsewhere along the coast, it, doubtless, can be sold to the Government for one-half of the above sum. When these men who have been bold enough to venture thousands of dollars in the beginnings of this industry shall obtain patent, is a matter of much uncertainty. The following circular tells its own story:

CIRCULAR.

Instructions concerning the acquisition of title to coal lands in Alaska, under the act of Congress approved June 6, 1900 (Public 168), entitled "An act to extend the coal-land laws to the district of Alaska."

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C., June 27, 1900.

Registers and Receivers, District of Alaska.

GENTLEMEN: Your attention is directed to the following act of Congress approved June 6, 1900, extending the coal-land laws to the district of Alaska:

"AN ACT To extend the coal-land laws to the district of Alaska.

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That so much of the public land laws of the United States are hereby extended to the district of Alaska as relate to coal lands, namely, sections twenty-three hundred and forty-seven to twenty-three hundred and fifty-two, inclusive, of the Revised Statutes."

Under the coal-land law, sections 2347 to 2352, inclusive, of the Revised Statutes, and the regulations thereunder issued July 31, 1882, coal-land filings and entries must be by legal subdivisions as made by the regular United States survey.

Section 2401 of the Revised Statutes, as amended by act of August 20, 1894, is as follows:

"When the settlers in any township not mineral or reserved by the Government, or persons and associations lawfully possessed of coal lands and otherwise qualified to make entry thereof, or when the owners or grantees of public lands of the United States under any law thereof, desire a survey made of the same under the authority of the Surveyor-General, and shall file an application therefor in writing and shall deposit in a proper United States depository to the credit of the United States a sum sufficient to pay for such survey, together with all expenditures incident thereto without cost or claim for indemnity on the United States, it shall be lawful for the surveyor-general, under such instructions as may be given him by Commissioner of the General Land Office and in accordance with law, to survey such township or such public lands owned by said grantees of the Government and make return thereof to the general and proper local land office: *Provided*, That no application shall be granted unless the township so proposed to be surveyed is within the range of the regular progress of the public surveys embraced by existing standard lines or bases for township and subdivisional surveys."

Under said section 2401 as amended persons and associations lawfully possessed of coal claims upon unsurveyed lands may have such claims surveyed, provided the township so proposed to be surveyed is within the range of the regular progress of the public surveys embraced by existing standard lines or bases for township and subdivisional surveys.

Although the system of public-land surveys was extended to the District of Alaska by a provision contained in the act of Congress approved March 3, 1899 (30 Stat., 1098), no township or subdivisional surveys have been made, nor have any standard lines or bases for township and subdivisional surveys been established within the district; therefore until the filing in your office of the official plat of survey of the township no coal filing nor entry can be made.

BINGER HERMANN,
Commissioner.

DEPARTMENT OF THE INTERIOR, *June 27, 1900.*

Approved.

E. A. HITCHCOCK,
Secretary.

These are the conditions which prevail to-day in Alaska with reference to the land laws. Each year since 1884 the governor in his annual report has emphasized the importance of giving the people speedy relief; but little heed has been given to these appeals. This lack of land titles is further aggravated by a decision of the Supreme Court in the case of Kinkead *v.* United States, volume 150, page 483. The two commissioners who were appointed to transfer and receive the territory made out property lists and gave certificates for the same. Inventory B, Greek Church property, 15 pieces; Inventory C, 21 pieces and fee simple to the land; Inventory D, 96 pieces, certificates allowing ownership to the houses, but not to the lots of land upon which they stood, were given. But the court says: "As we have already expressed the opinion that they possessed no power to vary the language of the treaty or to determine questions of title or ownership, it results that their action was not binding upon the Government." The title, then, is in the United States and not in the person who received certificates from the commissioners; and all the transfers which have been made within the past thirty-three years, therefore, simply amount to quitclaims. The people of Sitka would like to obtain a patent for a town site, but they do not know what to include and what to exclude, on account of the uncertainties of these titles by certificates which were given at the time of the transfer and on account of the numerous Government reservations which have not been properly surveyed. This subject was brought up in last year's report. The people of Sitka are surely entitled to relief in this matter, and it is again urged that Congress provide that the Secretary of the Interior, through the Commissioner of the General Land Office, survey all these holdings and give the history of the same and report the whole matter to Congress for its future action.

To sum up, then, the people of Alaska have no complaint to make about the mining laws or rights incident to mining any more than the people of California or Montana. There are a few amendments to these laws which they would like, and these will be mentioned later. That part of the law of May 14, 1898, in regard to the right of way for wagons and railroads they regard as fair and liberal. It is to be hoped that the public land committees of both Houses of Congress will give their attention to the subject of land laws for Alaska early in the coming session and see to it that these long-waiting and suffering people shall have no reason to complain after the 4th of March next.

TRANSPORTATION.

This has been and will continue to be a grave problem in Alaska; not so much so in southeastern Alaska as in the great body of the main part. In the southeastern part nature has provided waterways with a lavish hand. The Alexander Archipelago is a wonderful system of islands and channels, navigable for the largest ocean-going crafts. Some of these canals extend into the mainland for hundreds of miles. The increase in freight and passenger traffic in the southeastern part has multiplied many fold during the last four years. The trouble here has been to ascend the different passes. This has been successfully accomplished by the White Pass and Yukon Railroad, which company has now in operation 112 miles of railway, extending from salt water at Skagway to White Horse Rapids. All the waterways and harbors in the southeastern part are accessible throughout the year. Along the main coast of Alaska, on its southern side, nature has been liberal in providing anchorages and harbors from Cape Spencer to Unalaska. Yakutat, Prince William Sound, and the inlets of the southern side of Kenai Peninsula, all harbors on Kodiak Island, as well as those on the southern part of the Alaska Peninsula, are likewise open and accessible throughout the year. The headwaters on Cook Inlet freeze, and are not open until late in the spring. Tremendous tides rush into the inlet and make navigation very dangerous. Still our knowledge of all the facts is not complete, and we may be able yet, on further investigation, to utilize this magnificent arm of the sea for gaining access into the heart of Alaska.

The difficulties and solution of the problem of transportation begin after we leave Unalaska and begin to approach any part of the coast bordering on Bering Sea, and anyone who is interested in this question can understand it more intelligently by placing before himself Sailing Chart T, United States Coast and Geodetic Survey. It has the soundings, and while they may not be entirely correct, yet they will show how insuperable are the barriers to navigation. The mighty Yukon pours its waters and its silt into this sea and forms a delta which extends for hundreds of miles. Far out into the sea beyond the sight of land, vessels are liable to be caught upon a shallow bottom. For instance, the transport *Rosecrans*, in the hurry to reach Cape Nome early, went hard on one of these flats and was saved only by discharging and losing much of her valuable cargo and by the aid of a vessel sent to her rescue. The large mercantile and transportation companies have been struggling with the transportation problem and they have spent vast sums of money in endeavoring to get the best possible crafts to navigate the Yukon. St. Michael Island is about 60 miles north of one of the outlets of the river known as the Aphoon Mouth. They have erected immense stores, warehouses, hotels, and other buildings on the east side of the island. The water is shallow near the land and navigable only for light vessels. It is only an open roadstead for seagoing crafts, the largest of which will not enter in much closer than Egg Island, 7 or 8 miles distant. All freight is discharged upon lighters, which are towed to the warehouses. When the wind starts to blow, there may be a period of several days when no work can be done. Now, after the freight is landed from the ocean-going vessels in the warehouses, it is to be loaded on river steamers to be transported to different places, as far as Dawson. It is a very risky business for these vessels to get from St. Michael into the mouth of the river.

The Alaska Commercial Company has spared no expense in the construction of several river steamboats so as to secure the greatest buoyancy with the least draft. The *Hanna*, *Sarah*, *Susie*, and *Louise* are splendid vessels of their kind. About a year ago the *Louise* started from St. Michael with a load of freight and with two large barges in tow; near Steward Island she was caught in a storm, the barges were soon sunk and the *Louise* so badly damaged that she barely made the shore. The total loss was a large amount. On the morning of August 2 of this year the *Hanna*, on her down trip, drawing less than 5 feet of water, was stuck in the mud in Bering Sea at the mouth of the river. When the fog lifted, the sister vessel, *Susie*, was seen 2 miles farther off in the sea, stuck fast in the mud. She was loaded with freight and passengers bound for Dawson and was drawing less than 6 feet. These vessels had to wait from five to six hours for a rise of the tide. There seems to be no practicable way to improve any of the passes, for the ice would probably destroy each year any engineering work that might be attempted. There is no practicable method to overcome the obstacles raised by the ice.

When we come to the beach at Cape Nome, the difficulties beocme much greater. This season there was a spell of calm weather, which was very favorable to the shippers, for they were able, by the aid of barges, to lighter the freight and passengers with comparative ease. But it is an awful beach. A slight wind from the south starts the surf to rolling, which is always dangerous. Anyone who went along the beach the middle of August would see the wrecks of schooners, barges, steam launches, boats, stern-wheel steamers. Pumps, donkey boilers and engines, dredging machinery, and damaged provisions were strewn everywhere, much of it disappearing in the sand. It looked like one long line of destruction, which told what the wild waves were doing at Nome. It is hardly possible for a community in our day and generation to do business upon such a shore. The steamships lie off in the distance, some of them 2 and 3 miles, under a head of steam, ready to go to sea in case the storm becomes too violent. The prices demanded for lighterage were exorbitant, enough to make a good freight rate from the lower ports to Nome.

The United States transport *Lawton* left St. Michael for Nome on August 7, and dropped anchor opposite the United States barracks at Nome the next morning, and it took her five days to discharge 200 tons of freight. Once during this time she had to pull up anchor and go to sea. It is very doubtful whether any method can be contrived to overcome this surf, which beats in so mightily on that shore. Port Safety, Golofnin, and Norton bays are impassable on account of the shallowness of the water. About northwest from Nome is Port Clarence. This can be made a good harbor. The only objection to it is that it is not free from ice as early as the beach at Nome, but it is as good anchorage ground for vessels. Wharves and warehouses can be built on its shores, and by some engineering Grantly Harbor and Sinook Lake can be made navigable. Now, a railroad built over the backbone of Seward Peninsula, taking a general eastern course, will strike the Yukon River at about the point of its confluence with the Koyukuk, or near Nulato, a distance of about 250 miles. Branches could be built from the main line to all the mining camps. There are no insuperable barriers on the Seward Peninsula for railroad building, nothing to be compared with what was overcome in the construction of the White Pass and Yukon Railroad. By referring to the map one can see what a long and difficult stretch of navigation it is from St. Michael Island to Nulato, a distance of nearly 400 miles. As the Yukon River is free of its ice before it leaves St. Michael, steamboats loading at Nulato could make a trip or more to up-river points before the time the first boats usually get into the river.

There are no great obstacles in the navigation of the Yukon River from Nulato to Fort Yukon, but over the Yukon flats it is difficult to find the proper depth of water. From Circle City the river becomes easily navigable for large steamers as far as Fort Selkirk, where the Pelly and Lewes rivers unite. If such an avenue of transportation were opened up, it would do away with the horrors of Nome beach and the uncertainties and delays of the open roadstead at St. Michael. Will it pay any company or corporation to undertake such an enterprise? That the Seward Peninsula will be a gold-producing district for years to come can hardly be doubted; that the Yukon Valley will have a teeming and prosperous population is not doubted by any man who has gone up and down the river and who has carefully considered the possibilities of the country for a careful and industrious population to earn a living.

Large ocean-going crafts can land all construction material at Port Clarence at a comparative small cost. The country along the Koyukuk will furnish timber for cross-ties, bridges, and telegraph poles. The transportation companies which are already located at St. Michael, and who have spent such large sums of money in their various plants, can hardly be expected to look with favor upon a new route of travel and transportation, which will make these properties comparatively worthless. When the prospector is supplied with transportation and outfits at a less cost than is now generally prevailing, the country will be more quickly opened up and a larger number of laborers can follow and find profitable employment. The rate of freight and passage to points in southeast Alaska is controlled by the Joint Tariff Steamship Association. General merchandise to Ketchikan from Sound ports is $8 per ton; passenger fares, $10 and $17. Merchandise to Juneau, $9; fares, $12 and $20. Merchandise to Skagway, $10; fares, $16 and $25. Merchandise to Sitka, $9; fares, $18 and $30.

Either 2,000 pounds or 40 cubic feet make 1 ton. Feathers, hay, and household goods will be taken by measurement. The freight tariff is classified. For instance, hardware is, first class, $9 to Sitka. Ice, prepaid and at owner's risk, is 1½, or $13.50 to Sitka. Game, fresh, prepaid and at owner's risk, double first class, or $18 to Sitka. Musical instruments, by weight or measurement, at carrier's option, three times first class, or $27 per ton to Sitka. Meat, fresh, at owner's risk, prepaid, by weight, but less than 50 cents per carcass, four times first class, or $36 per ton to Sitka. Flour, by weight, second class, $7.50 to Sitka. Empty trunk, owner's risk, third class, $6.50 to Sitka. Horns and hoofs, in sacks, fourth class, $6.50 per ton to Sitka. Excelsior, fifth class, $5.50. Empty oil cans, cased and measured, sixth class, $4.50 per ton, etc. Corpse, first-class fare. Shippers who contract with a company to do all their shipping through it get a rebate of 20 per cent or more.

These are the rates for places along the usual route taken by the steamships, and for outlying points a certain amount of business must be assured before they will make a call.

The following is the freight and passenger tariff of the Alaska Commercial Company's steamer *Bertha* for the season of 1900:

Passenger tariff.

Class.	Seattle.	Juneau.	Sitka.	Yakutat.	Kayak.	Orca.	Valdez.	Saldovia.	Homer.	Kenai.	Tyonek.	Kadiak.
First class	$20	......	......	......	......	......	......	......	......	......	......	......
Steerage	12	......	......	......	......	......	......	......	......	......	......	......
First class	30	$10	......	......	......	......	......	......	......	......	......	......
Steerage	18	6	......	......	......	......	......	......	......	......	......	......
First class	32	14	$10	......	......	......	......	......	......	......	......	......
Steerage	22	10	7	......	......	......	......	......	......	......	......	......
First class	47	30	27	$12	......	......	......	......	......	......	......	......
Steerage	30	20	18	6	......	......	......	......	......	......	......	......
First class	50	30	28	16	$10	......	......	......	......	......	......	......
Steerage	32	20	18	10	6	......	......	......	......	......	......	......
First class	55	35	33	21	15	$6	......	......	......	......	......	......
Steerage	37	25	23	15	10	5	......	......	......	......	......	......
First class	58	37	35	27	20	10	$10	......	......	......	......	......
Steerage	38	25	24	18	15	7	7	......	......	......	......	......
First class	58	37	35	27	20	10	10	$2	......	......	......	......
Steerage	38	25	24	18	15	7	7	2	......	......	......	......
First class	60	42	42	32	25	15	15	5	$5	......	......	......
Steerage	42	30	30	23	20	12	12	4	4	......	......	......
First class	60	42	42	32	25	15	15	5	8	$5	......	......
Steerage	42	30	30	23	20	12	12	4	5	4	......	......
First class	60	42	40	32	20	16	14	8	8	8	$10	......
Steerage	42	30	25	23	15	10	9	5	5	5	8	......

Ten per cent off on round-trip tickets.
Children under 5 years of age, free.
Children under 10 years of age, half fare.
Indians, $1 less than regular rates.

One hundred and fifty pounds baggage, not exceeding $100 in valuation, allowed on each full ticket. Three cents per pound will be charged on all excess baggage.

Stops will be made at intermediate points for a party of ten or more. Arrangements for such stops can be made with any of the company's agents.

Freight tariff.

Seattle.	Juneau.	Sitka.	Yakutat.	Kayak.	Orca.	Valdez.	Saldovia.	Homer.	Kenai.	Tyonek.	Kadiak.
$9	......	......	......	......	......	......	......	......	......	......	......
9	$5	......	......	......	......	......	......	......	......	......	......
15	6	$6	......	......	......	......	......	......	......	......	......
15	10	10	$10	......	......	......	......	......	......	......	......
15	10	10	10	$5	......	......	......	......	......	......	......
15	10	10	10	10	$5	......	......	......	......	......	......
15	10	10	10	10	5	$5	......	......	......	......	......
15	10	10	10	10	5	5	$5	......	......	......	......
20	15	15	15	15	10	10	10	$3	......	......	......
20	15	15	15	15	10	10	10	5	$3	......	......
15	10	10	10	10	6	6	6	5	6	$6	......

The above rates are per ton of 40 cubic feet, or 2,000 pounds, ship's option.

All lighterage at risk of owner or consignee.

Pacific Steam Whaling Company Passenger Tariff.

Class.	Sitka.	Yakutat.	Kayak.	Nucheck.	Orca.	Portage Bay.	Copper City.	Homer.	Tyoonock.	Kodiak.	Karluk.	Sand Point.	Unga.	Belkofski.	Unalaska.
First class	$14	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Second class	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Round trip	26	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	24	$10	....	....	....	....	....	....	....	....	....	....	....	....	....
Second class	15	5	....	....	....	....	....	....	....	....	....	....	....	....	....
Round trip	46	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	28	14	$4	....	....	....	....	....	....	....	....	....	....	....	....
Second class	18	8	3	....	....	....	....	....	....	....	....	....	....	....	....
Round trip	51	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	30	18	8	$2	....	....	....	....	....	....	....	....	....	....	....
Second class	20	10	5	2	....	....	....	....	....	....	....	....	....	....	....
Round trip	58	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	35	21	11	10	$10	....	....	....	....	....	....	....	....	....	....
Second class	20	10	5	10	10	....	....	....	....	....	....	....	....	....	....
Round trip	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	35	21	11	5	5	$5	....	....	....	....	....	....	....	....	....
Second class	20	10	11	5	5	5	....	....	....	....	....	....	....	....	....
Round trip	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	35	21	11	10	10	10	$10	....	....	....	....	....	....	....	....
Second class	22	12	7	7	7	7	7	....	....	....	....	....	....	....	....
Round trip	68	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	40	26	16	15	15	15	15	$5	....	....	....	....	....	....	....
Second class	30	20	10	10	10	10	10	5	....	....	....	....	....	....	....
Round trip	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	37	23	13	9	9	9	9	5	$8	....	....	....	....	....	....
Second class	23	13	8	5	5	5	5	3	5	....	....	....	....	....	....
Round trip	70	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	40	26	16	12	10	10	10	5	10	$5	....	....	....	....	....
Second class	25	15	10	7	5	5	5	4	7	3	....	....	....	....	....
Round trip	75	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	55	41	31	27	25	25	25	20	25	20	$15	....	....	....	....
Second class	36	26	21	18	16	16	16	13	16	13	10	....	....	....	....
Round trip	100	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	56	42	32	28	26	26	26	21	26	21	16	$1	....	....	....
Second class	37	27	22	19	17	17	17	14	17	14	11	1	....	....	....
Round trip	100	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	59	45	35	31	29	29	29	24	29	24	19	4	$3	....	....
Second class	39	29	24	21	19	19	19	16	19	16	13	3	2	....	....
Round trip	110	....	....	....	....	....	....	....	....	....	....	....	....	....	....
First class	70	56	46	42	40	40	40	35	40	35	30	15	14	$11	....
Second class	45	35	30	27	25	25	25	22	25	22	19	9	8	6	....
Round trip	125	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Pacific Steam Whaling Company Passenger Tariff—Continued.

Class.	San Francisco.	Seattle.	Wrangel.	Juneau.	Dyea.	Skagway.	Sitka.
First class	$15.00	...	...	...	...	...	...
Second class	8.00	...	...	...	...	...	...
First class	42.00	$30.00	...	...	...	...	...
Second class	26.00	20.00	...	...	...	...	...
First class	47.00	35.00	$10.00	...	...	...	...
Second class	28.00	22.00	6.00	...	...	...	...
First class	52.00	50.00	20.00	$10.00	...	...	...
Second class	31.00	35.00	14.00	8.00	...	...	...
First class	52.00	50.00	20.00	10.00	$0.50	...	...
Second class	31.00	35.00	14.00	8.00	...	...	...
First class	52.00	40.00	20.00	10.00	10.00	$10.00	...
Second class	31.00	25.00	12.00	6.00	6.00	6.00	...

Freight tariff.

Sitka.	Yakutat.	Kayak.	Nucheck.	Orca.	Portage Bay.	Copper City.	Homer.	Tyonek.	Kadiak.	Karluk.	Sand Point.	Unga.	Belkofski.	Unalaska and Dutch Harbor.
$6	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	$10	...	...	...	...	...	...	...	...	...	...	...	...	...
10	5	$3	...	...	...	...	...	...	...	...	...	...	...	...
10	5	3	$3	...	...	...	...	...	...	...	...	...	...	...
10	6	3	5	$5	...	...	...	...	...	...	...	...	...	...
10	6	4	5	5	$5	...	...	...	...	...	...	...	...	...
12	6	4	5	5	5	$5	...	...	...	...	...	...	...	...
15	15	12	10	10	10	10	$5	...	...	...	...	...	...	...
11	6	5	5	5	5	5	3	$5	...	...	...	...	...	...
13	8	8	6	6	6	6	5	6	$3	...	...	...	...	...
18	10	10	6	6	6	6	5	7	5	$6	...	...	...	...
20	10	10	6	6	6	6	5	7	5	6	$2	...	...	...
20	10	10	6	6	6	6	5	7	5	6	2	$2	...	...
20	15	15	10	10	10	10	10	10	10	10	10	10	$10	...

The following freight and passenger schedules were kindly furnished by the North American Transportation and Trading Company and were in effect on August 7, 1900:

Schedule B.—Passenger rate, in dollars.

	Local districts.	Kootlick.	Hamilton.	Andreafski.	Russian Mission.	Holy Cross Mission.	Anvik.	Kaltag.	Nulato.	Weare.	Rampart.	Fort Hamlin.	Fort Yukon.	Circle City.	Eagle City.	Coal Creek.	Fort Cudahy.	Dawson.
Miles from St. Michael	...	80	100	210	320	410	460	625	650	900	975	1,035	1,255	1,330	1,475	1,530	1,540	1,605
St. Michael	...	10	10	20	30	35	40	50	55	70	75	80	95	105	120	125	125	125
Kootlick	80	...	10	15	20	30	35	45	50	65	70	75	90	100	115	120	120	125
Hamilton	20	...	...	10	15	20	30	35	45	50	65	70	75	90	105	110	110	115
Andreafski	110	...	...	...	15	20	25	35	40	50	55	60	75	90	105	110	110	115
Russian Mission	110	...	...	...	...	10	15	20	25	40	45	50	70	80	100	105	105	110
Holy Cross Mission	90	...	...	...	...	...	10	20	25	35	40	45	65	75	90	100	100	105
Anvik	50	...	...	...	...	...	...	15	20	35	40	45	60	70	90	95	95	100
Kaltag	165	...	...	...	...	...	...	...	5	30	35	40	60	70	90	95	95	100
Nulato	25	...	...	...	...	...	...	...	...	20	30	40	55	65	85	90	90	100
Weare	250	...	...	...	...	...	...	...	...	...	10	15	30	45	65	75	75	80
Rampart	75	...	...	...	...	...	...	...	...	...	...	10	25	40	60	70	70	75
Fort Hamlin	60	...	...	...	...	...	...	...	...	...	...	...	20	35	55	65	65	70
Fort Yukon	220	...	...	...	...	...	...	...	...	...	...	...	...	20	40	50	50	60
Circle City	75	...	...	...	...	...	...	...	...	...	...	...	...	...	20	30	30	40
Eagle City	145	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	10	20
Coal Creek	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	10
Fort Cudahy	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10

Commercial freight, Yukon River rates, in dollars per ton.

	Kootlick.	Hamilton.	Andreafski.	Russian Mission.	Holy Cross Mission.	Anvik.	Kaltag.	Nulato.	Weare.	Rampart.	Fort Hamlin.	Fort Yukon.	Circle City.	Eagle City.	Coal Creek.	Fort Cudahy.	Dawson.
Miles from St. Michael	80	100	210	320	410	460	625	650	900	975	1,035	1,255	1,330	1,475	1,530	1,540	1,605
St. Michael	20	20	25	30	35	40	45	50	60	60	60	70	90	95	100	100	100
Kootlick	...	10	10	20	25	25	30	35	40	40	45	55	70	75	80	80	80
Hamilton	...	...	10	15	20	20	30	40	40	45	45	60	70	70	70	70	75
Andreafski	...	...	...	10	15	15	25	30	40	40	40	45	60	65	70	70	75
Russian Mission	...	...	...	...	10	10	20	20	30	30	40	40	60	65	70	70	70
Holy Cross Mission	...	...	...	...	...	10	15	15	30	30	35	40	55	60	65	65	65
Anvik	...	...	...	...	...	...	15	15	25	25	30	40	55	60	65	65	65
Kaltag	...	...	...	...	...	...	...	10	15	15	20	25	40	50	50	50	50
Nulato	...	...	...	...	...	...	...	...	15	15	20	30	45	50	55	55	55
Weare	...	...	...	...	...	...	...	...	...	10	15	20	35	40	45	45	45
Rampart	...	...	...	...	...	...	...	...	...	...	10	15	30	40	40	40	40
Fort Hamlin	...	...	...	...	...	...	...	...	...	...	...	15	30	35	40	40	40
Fort Yukon	...	...	...	...	...	...	...	...	...	...	...	...	20	25	30	30	30
Circle City	...	...	...	...	...	...	...	...	...	...	...	...	...	15	20	20	20
Eagle City	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	15	20
Coal Creek	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	15
Fort Cudahy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15

River steamers ascend the Koyukuk 450 miles to Bergman. The fare from St. Michael is $105; freight, $125 per ton. At the present time Circle City is the outfitting point for those who wish to reach the new diggings in the Tanana country, about 125 miles distance. Packers were getting $1.25 per pound to transport supplies on horses from Circle to the camp. Allowing $20 as the transportation charge from a sound port to St. Michael for a ton of goods, it will cost a miner $2,610 to have that ton of supplies placed at his camp. The invoice price must be added to make up the total cost. Is it a wonder that a prospector seeks for coarse gold that will go several dollars to the pan?

The schedules for the White Pass and Yukon Railway are not at hand. Their rates until lately were 3 cents per pound for carload lots from Skagway to Lake Bennett, a distance of 42 miles, and $10 for a passenger for the same distance.

The interior of Alaska can be reached by way of Valdez. Captain Abercrombie has opened up more than 125 miles of trail, and some parties have taken in a very considerable amount of supplies on pack horses. In the near future there will, no doubt, be a railroad up the Copper River Valley to the divide, with branches extending to Eagle, Circle, and to places lower down on the Yukon. This will solve the question of an all-American route. Citizens of the United States who are bound for Eagle and Circle and other places on the Yukon within Alaska dislike to come in contact with the Canadian customs officials. There are so many delays and hindrances which make it annoying and costly. In connection with this subject of transportation, the merchants of Skagway complain that they are not treated fairly and justly. The discriminations against them by the Canadian authorities are severe and prohibitive. For instance, when merchants in Vancouver or Victoria, British Columbia, purchase American goods in Seattle or San Francisco, they can be shipped through without hindrance, and only a duty on the Seattle or San Francisco invoices will be exacted, but when the merchant at Skagway attempts to ship similar goods of identical brands the customs officers demand that a shipper must present an invoice of the cost of the goods laid down in the warehouse at Skagway; that he must add the freight and wharfage and storage to the original invoice and pay duty on that amount.

NOME.

Who can tell the story in all its vivid lights and shadows? The newspapers have been quick to publish every bit of information from this wonderful northland. Klondike in 1896 and 1897 was written about as wonderland, but it has each year given up its millions of treasure. Nome! Could it be that away on the verge of the North American continent, where frost and ice seize and seal up the earth for so large a part of the year, gold, yellow, glittering, precious gold, could be washed from the sands and gulches, and no terrible Chilcoot Pass to climb? The columns of advertising in the daily newspapers answered, yes. Information was sought for from all parts of the United States. Parties were made up in Boston, Pittsburg, Chicago, Los Angeles. Men came from Maine, Texas, Minnesota, and Dakota, and from all the mining regions of the Rocky Mountains. Some had well-matured ideas and plans, and were going with the intention to prospect and to mine. Some were of the sporting class and intended to gamble and get through on their wits. The fever was in the air and in the blood. It was, as Petrucio says—

> Such wind as scatters young men through the world,
> To seek their fortunes farther than at home,
> Where small experience grows.

Large outlays were made for gambling, furniture, theatrical outfits, liquors of all kinds, tobacco in every variety. Variety performers, indifferent, bad, and very bad, were in evidence. Prostitutes under various guises and under no guise at all joined the rush. Some had patent rockers, some had dredges to work the sands, others had pumps and pipes, and every fellow sanguine of success. Bankers, lawyers, doctors, preachers, merchants, ex-capitalists, hotel men, speculators, the hoi polloi, and a few miners—was there ever a greater variety and withal a greater amount of ability to join in such a stampede? The sailing date of each steamship was like a holiday in the city whence she took her departure. The wharves and approaches were crowded with the curious and friends to wave good-bye. The crowding and overcrowding on most of these steamships was shameful. In one, six passengers were confined to 216 cubic feet, that is 6 by 6 by 6 feet. The voyage in some of these ships was remarkable. One took fire about seven days out and the steam hose was turned on for thirty-six hours. She had on, for the most part, a theatrical outfit, which means gaming tables, whiskies, wines, beers, tobaccos, fine groceries, etc. After they had been out for quite a number of days some of the smart ones came to the conclusion that the captain was off his course. They compared their pocket instruments with the ship's compass and, after they had made up their reckoning, told the captain that he was 1,000 miles out of position. Cargo was broached and cigars and champagne passed freely. After they had made the ice line, and when they had labored in it for days, they passed and reached the golden strand at Nome. But this was not the end. They were ordered to quarantine on account of smallpox. This was the last straw, and fourteen days were given to philosophical reflection. The theater was not erected. Steam had cooked almost everything and the tables were useless. This was one of the extreme cases. This stampede to Nome is unique. There is nothing in the history of the country like it.

The arrivals on the ocean vessels to July 15 were 18,000 souls. One hundred and sixty-two steamships and 70 sailing vessels arrived up to August 1.

The registered tonnage of these vessels amounted to 67,891. The actual tonnage carried was, no doubt, twice this amount. The number of arrivals by way of the Yukon was estimated at 4,000 and the number who wintered there has been estimated at 3,000. This, then, would make the number of inhabitants of the camps about 25,000. It was fortunate for those who had freight to handle that the weather was so fine during part of June and July, for, as everything had to be lightered on barges or in boats, stuff was taken ashore with much loss or damage. But the price for this service per ton came very high, much of it at $10. By August 12 prices at Nome were on the decline. Laundry work, white shirts, 50 cents; collars, 15 cents; cuffs, 25 cents; socks, per dozen, $1; jumpers, 50 cents; overalls, 50 cents; undershirts, 25 cents; overshirts, 25 cents. These prices are much below what had prevailed shortly before this date. The Golden Gate café was charging these prices on the same date. The price for a small room with single bed, new and clean, $4 per day.

Table d'hote dinner, $1; luncheon, $1.

Meats:		Eggs:	
Plain steak	$1.00	Three fried	$1.00
Sirloin steak	1.50	Three boiled	1.00
T bone	2.00	Three shirred	1.00
Tenderloin	2.50	Scrambled	1.00
Extra tenderloin	3.50	Plain omelet	1.00
Porterhouse	3.00	Three poached	1.00
Family porterhouse (for two)	5.00	Onion omelet	1.00
Mutton chops	1.00	Ham omelet	1.00
French mutton chops	1.50	Rum omelet	2.00
English mutton chops	2.00	Spanish omelet	1.50
Country sausages	1.50	Oatmeal mush and cream	.25
Calf's liver with bacon	1.50	Flannel cakes and coffee	.25
Calf's liver with onions	1.50	Rice batter cakes	.25
Corned beef hash with egg	1.50	Boston cream toast	.50
Hamburger steak	1.00	Milk toast	.50
Wiener schnitzel	2.00	Buttered and dry toast	.25
Codfish cakes	1.00	French pancake	1.00
Mackerel	1.50	German pancake	1.50
Bacon and eggs	1.00		
Ham and eggs	1.00		

The population for the most part was living under canvas. As one approaches on the vessel he can see the tents strung along the beach for miles. The fine weather was favorable for getting merchandise ashore and for prospecting, but it was a great drawback to mining because there was no water. The mountains are low, and the snow, never very deep, disappears early. The quarantine was a hardship to many who had their supplies on board and ready for transportation to their claims. It is not possible to get over that country well in the summer time with pack animals, but in winter they can be driven everywhere, and everything can be made ready for the summer work. If a court could have been opened there as early as March and a certain number of cases tried which involved the different questions at issue, many claims would have heen opened, which no doubt would have swelled the output very largely. Litigation begets uncertainty. Investors are cautious where there is a liablity to purchase a lawsuit with a mining interest. None of these cases could be determined until some time in September. Whichever side may lose, the case will be appealed to a higher court. Much of this rich placer ground, therefore, may be tied up for two seasons yet.

STAKING CLAIMS BY POWER OF ATTORNEY.

There is but one sentiment on this subject among miners, namely, that it is detrimental and wrong, for it defeats the beneficent purpose of our very liberal mining laws—the production of the precious metals. Claims staked after January 1 can be held for nearly two years without doing a dollar's worth of labor upon them. Miles of country have thus been staked and held simply for speculation. Hundreds of good miners who went to Nome this season and who went many miles into the interior to prospect, found stream after stream staked, and very seldom could they find where the smallest prospect hole had been sunk. They knew that if they should sink and find a rich pay streak on any of this ground a claimant would soon arrive, so many left in disgust. Some who have tested the diggings enough to satisfy themselves of its richness in certain places will remain over winter, and after January 1 will jump those claims upon which assessment work has not been performed. Anyone can see how Alaska is suffering from this unlimited right to stake. The injury will continue right along and be multiplied many fold unless Congress prescribe a remedy speedily. The committees of both Houses on mines and mining are therefore respectfully requested to inquire into this matter and to find a way to combat and overcome it, and to see to it that the conclusions are put into a law as soon as possible. Men of long experience in the various mining camps of the West have faith in Seward Peninsula as a mining region, and that it will yield vast sums of gold. In view of what has been stated above it would simply be guesswork at this writing to estimate the product of the camp for this year. We have no way of finding out what the various claims which are worked clean up. The assay officers below try to keep run of the whole product, but they can not well separate the amounts from the different districts.

KOYUKUK.

Northeast from the Seward Peninsula there is a large unexplored region until the head waters of the Koyukuk River are reached. Gold in paying quantities has been discovered, and during last winter there was a stampede from Dawson and other points to these parts. The output of gold will be about $200,000. The assay value is $17.50. There will be as many as 400 men on the river this winter. The average outfit costs $800. There were 50 horses, and plenty of hay could be cured for these. If these had to be killed, they would bring good prices for dog food. Last winter there was a doctor in the camp, but men did not suffer much from scurvy. There is plenty of timber. The country bids fair to become a quartz-mining district. Galena and copper ores have been discovered. Above Bettles a vein of good coal has been found. This point can be reached by river steamers in the spring. This year the river was clear of ice by the 21st of May. In winter there is an abundance of white-fish, and salmon in summer. There is reindeer moss over the country, but not thick. A sleigh dog is worth $75. There are caribou, moose, ptarmigan, and rabbits. Usual snow fall is 2½ feet. The coldest last winter, 72°; average, 48°. They hope to get four mails this season. This information has been furnished by Mr. H. Turner, who is known to be truthful and reliable, notwithstanding that he has lived upon the Yukon for several years; but he has been out a few times.

RAMPART CITY.

This place is situated in a graceful bend of the Yukon, which rolls down in a majestic sweep between the mountains, and is located upon the left bank. It is a beautiful location for a city. It is the supply station for the miners who are at work upon Big Minook and its tributaries, Hunter, Little Minook, Little Minook, jr., Hoozier, etc. Nome attracted many last fall, and work was not pushed very vigorously on many claims last winter. However, the amount taken out was a good showing for the number who were at work. It was reckoned at more than $250,000. The fineness of the gold from this camp exceeds that of any other diggings in the Yukon Valley. Many who went to Nome will return here for the winter and bring others with them. There is an immense area yet to prospect far to the southward.

CIRCLE CITY.

Deserted down to one or two men during the winter of 1896 and 1897, Circle is now assuming new life. It is the handiest outfitting station for the new Tanana diggings, about 125 miles from Circle. Those who go to these new fields from up-river points go by this place and outfit here. It bids fair to become a place of more importance than it has been at any time in the past. It could not be ascertained what amount of dust makes its way through Circle.

EAGLE CITY.

This place is well located on the south bank of the Yukon and is a most desirable location for a town. It is not far from the line which divides Alaska from Yukon territory. The United States military post of Fort Egbert is located here and it is the supply depot on the American side for the miners in the Forty-Mile district. It is the headquarters for the third division of the court, and after it has been in operation for a year tenures will be more certain and the rate of progress will be steady and rapid. When an all-American route by rail shall have been established Eagle will be the up-river terminus. Some very rich placer claims upon Jack Wade Creek had been in dispute, and action was begun in the court in southeast Alaska before the passage of the last act. This involved great expense and long delay, and is a forcible illustration why a court was needed upon the Upper Yukon. The output for that district last year was reckoned at $750,000. It could not be ascertained at the time Eagle was visited whether the amount would be as great or greater for 1900.

LITUYA BAY.

The beach about midway between Cross Sound and Yakutat has been washed for gold for a number of years, but the earthquake and storms in September, 1899, made such changes and disturbances but little was accomplished. These washings will always be renewed, for they are subject to the action of the sea and it is unceasing.

KANTACK ISLAND.

Here the surf dashes up against the bank and at times carries away great portions of it, timber and all. There is a deposit of gold in the black and ruby sands, and a few men by careful work and forethought may make good wages and possibly more for a season.

SUNRISE.

This town is near the head of Turnagin Arm, which opens into Cook Inlet. There are diggings on both sides of the arm, but those which have been most extensively worked run up into the neck of the Kenai Peninsula. The miners here for several seasons have had to contend with one obstacle after another, dry seasons giving no water to work with, floods at other times cleaning out wing dams and changing the whole face of a claim. But they have kept pluckily at it, and a number have been fairly well rewarded. Resurrection Bay opens on the southern side of this peninsula. Some California people have been operating in here for three seasons, and early this year they took in a hydraulic plant, and it is presumed that they are satisfied with their work.

CHESNA.

About 200 miles up the Copper River Valley and to the northwest of the great bend of the river new diggings have been struck, which have turned out a good many thousands this summer. Supplies at such a distance from base come very costly, and it requires good pay to meet expenses. But now that the gold is there and that in due time, when supplies can be laid down at less cost, a large area can be worked profitably.

QUARTZ MINING.

This is the kind of mining for which Alaska will be preeminent in the near future. Even now in this industry it is affording the finest illustration that the world knows of profitable working of low-grade ore. Along Gastineaux Channel, in southeast Alaska, is a group of mineral claims known generally as the Treadwell or Douglas Island mines. The works for reducing that body of ore are strung along that island and are under one general management, but divided into three companies. The first is the Alaska Treadwell Gold Mining Company, embracing two mills, one of 240 and the other of 300 stamps and other works, Mr. J. P. Corbus, superintendent. Mr. Corbus has kindly furnished an advance copy of his report for the year ending May 15, 1900. The following information is gleaned from it:

MINE.

Exploration and development operations for the year have been as follows:

Number of level.	Drives.	Cross-cuts.	Raises.	Pump station.	Sump.	Total.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Adit		50				50
110-foot	212		195			407
220-foot	702		515	60	20	1,297
330-foot	444	415	245			1,104
440-foot	449		148			597
No. 1 shaft						
No. 2 shaft						
Total	1,807	465	1,103	60	20	3,455

Exclusive of pits, the approximate total development in mine May 15, 1900, is as follows:

	Feet.
Drives	7,800
Crosscuts	3,260
Raises	2,629
Shafts	778
Total	14,469

Ore mined and sent to mill May 16, 1899, to May 15, 1900, inclusive:

	Tons.
Adit and 110-foot levels	373,592
220-foot level	173,292
330-foot level	6,351
440-foot level	4,725
Total	557,960

The estimate of ore in sight and available for mill May 15, 1900, is as follows:

	Tons.
Adit and 110-foot levels	1,514,408
220-foot level	2,115,708
330-foot level	226,849
440-foot level	274,675
Total	4,131,640

MILLS.

240-stamp mill.—The total run for year at this mill was 312 days 9 hours 41 minutes, during which time 225,722 tons of ore were crushed, the duty in tons per stamp per hour being 3.01 +, as against a run of 353 days 2 hours 50 minutes and a duty of 2.95 tons per stamp for previous year.

The large loss of running time at this mill was due to the following causes: Holidays, 2; shortage of battery water, 2 days; shortage of rock due to scarcity of laborers in mine, 42½ days; broken water-wheel shafts, 1½ days; clean ups, 2½ days; various other causes, such as repairs to batteries, changing from water power to steam power, and vice versa, splicing ropes, etc., 2⅛ days; total lost time for year, 52⅝ days.

On 15th instant, after a run of over fifteen years, this mill was closed down for extensive repairs, it being the intention to renew the ore bins, ore-bin foundations, battery foundation, and battery framework throughout. No work will be done on the mill building, as that still remains in good condition. Timber for reconstruction work is Washington fir, and was purchased and framed at Seattle, State of Washington. To complete first section (40 stamps) will require until about July 15. Half of the mill should be finished and dropping ore by August 15, and the full mill of 240 stamps should be running not later than October 1, 1900.

300-stamp mill.—An excellent record was made at this mill during last year, both as to running time and crushing capacity. The running time was 270 days 5 hours

45 minutes; the amount of ore crushed was 332,238 tons, or a duty of $4\frac{1}{10}$ tons per stamp per 24 hours.

Last winter was an exceptionally short and mild one; consequently the water season for this mill was much longer than usual. Under ordinary conditions I believe it will not be possible to run this mill by water power for more than seven and one-half months per year, or, say, the mill has a capacity of 285,000 tons per year.

The total amount of ore crushed at both mills last year was 557,960 tons, which cost $110,903.25, or $0.1988 per ton. The ore yielded $773,165.69 ($1.39 per ton) in free gold and $380,201.91 from sulphurets, a total yield of $1,153,367.60, or $2.07 per ton.

The yield of sulphurets from above amount of ore amounted to 9,825 tons, all of which was shipped by barges and steamers to Tacoma for treatment by Tacoma Smelting Company. The total cost of shipping and treating sulphurets last year was $79,384.69, or $8.10 per ton. This high rate was due principally to the fact that parties who contracted to carry our concentrates in bulk from the mine to Tacoma failed to place at our disposal a sufficient number of barges to properly care for our product; consequently we were forced at times to ship by other means at an increased rate of freight, besides having to stand the additional cost of sacking the sulphurets so shipped. Given proper shipping facilities, our sulphurets should be shipped in bulk and treated at a cost not to exceed $7 per ton.

During above run steam power was used 157 days 23 hours 23 minutes. When water became short steam power was used at this mill and water sold to United Company for their stamp mill.

300-stamp mill (water only).

Month.	Time run.			Time lost.			Shoes.	Dies.	Cam.	Ore crushed.	Sulphuret saved.
	D.	*h.*	*m.*	*D.*	*h.*	*m.*	*S.*	*D.*			
May	8	13	40	0	2	20	....	....	....	10,200	....
June	30	18	16	0	5	44	....	....	....	34,845	547
July	28	17	22	1	6	38	....	....	....	33,842	715
August	29	22	37	1	1	23	100	....	1	37,708	747
September	28	11	13	2	12	47	40	15	....	34,932	696
October	29	16	58	0	7	2	135	....	....	37,272	726
November	29	17	32	1	6	28	56	230	....	36,403	520
December	25	17	32	4	6	28	60	40	....	31,279	598
January	5	0	44	25	23	16	25	15	....	5,830	150
February	....	....	....	31	0	0	....	....	....	....	....
March	....	....	....	28	0	0	....	....	....	....	....
April	23	20	5	7	3	55	55	20	....	30,889	522
May	29	17	45	0	6	14	129	75	....	39,038	706
Total	270	5	45	103	10	15	600	395	1	332,238	5,927

NOTE.—Mill started May 6, 1899; hung up for winter January 3 to March 21, 1900. With the exception of time taken for clean ups and twenty-four hours for holiday (July 4), the entire lost time at this mill was due to shortage of water power.

LABOR SUPPLY.

During greater part of the year labor has been scarce, especially that class from which we draw our mine laborers and carmen. Following are rates of wages paid different classes of employees here:

Machine drillers, $2.50 per day in summer; $43 per month in winter, with board and lodging.

Machine helpers, $2.25 per day, with board and lodging.

Mine laborers (white), $2 per day, with board and lodging.

Mine laborers (Indians), $2 per day, without board.

Amalgamators, $90 per month, with board and lodging.

Feeders, $70 per month, with board and lodging.

Vannermen, $65 to $100 per month, with board and lodging.

Machinists and helpers in machine shop, $2 to $6 per day, with board and lodging.

Blacksmiths, $4 per day, with board and lodging.

Drill sharpeners, $3.50 per day, with board and lodging.

Blacksmiths' helpers, $2 per day, with board and lodging.

GENERAL.

There has been no marked change in appearance of mine for better or worse by the past year's development. The general appearance of the mine on this date is good and the outlook for coming year encouraging.

The second is the Alaska Mexican Gold Mining Company, Mr. A. M. Robeson, superintendent. The seventh annual report is for the year ending December 31, 1899. It shows that the output of ore was 166,054 tons of 2,000 pounds, which yielded a total value of $358,161.37, or $2.15 per ton; 3,297.29 tons of concentrates were saved.

The ore in sight is estimated to be as follows:

	Tons.
Over adit level	28,000
Over 110-foot level	44,900
Over 220-foot level	67,600
Over 330-foot level (estimated)	166,500
Broken ore in pits and stopes	60,000
Total available reserves	367,000

MILL.

The mill ran an equivalent of 357$\frac{1}{12}$ days for the full mill of 120 stamps, out of a possible 363 days, crushing 166,054 tons of ore, or 3.87 tons per stamp per day. The cost of milling, including that of saving the concentrates, was $0.2976 per ton crushed.

GENERAL.

The average number of men, including Indians, employed per day for the year was 160, and the average amount paid each man, including the cost of board, was $3.24 per day.

There were five accidents, resulting in the loss of two lives.

The present appearance of the mine warrants the belief that the outlook for the future is good.

The total operating cost per ton of ore is $1.6796.

Bullion shipments from Alaska Mexican mine from beginning of operations to December 31, 1899.

Year.	Tons crushed.	Yield, free gold.	Concentrates (sulphurets).		Total yield.	Total yield per ton.	Operating profits.	Operating profits per ton.	Operating costs per ton.	Dividends paid.
			Tons treated.	Yield.						
1894	73,141	$154,643.33	1,393.5	$49,399.13	$204,042.46	$2.79	$60,215.60	$0.82	$1.97	$25,500.00
1895	79,439	155,637.54	1,575.1	70,620.53	226,258.07	2.85	71,391.78	.90	1.95	79,881.00
1896	101,702	169,532.32	1,652.2	76,329.66	245,861.98	2.42	61,650.43	.61	1.81	72,000.00
1897	158,005	226,321.71	3,472.5	109,306.96	335,628.67	2.12	87,101.46	.55	1.57	72,000.00
1898	162,457	257,484.67	3,402	118,397.69	375,882.36	2.31	100,663.07	.62	1.69	72,000.00
1899	166,054	231,841.23	3,053.09	115,573.74	347,414.97	2.09	62,333.42	.38	1.73	72,000.00
Total	740,798	1,195,460.80	14,548.39	539,627.71	1,735,088.51	2.34	443,355.76	.60	1.75	393,881.00

The third is the Alaska United Gold Mining Company, Mr. A. M. Robeson, superintendent. The fourth annual statement is for the year ending December 31, 1899. This embraces two claims, the Ready Bullion mine and the 700-foot claim, 120-stamp mill and a 100-stamp mill. The output of ore from the Ready Bullion was 162,107 tons of 2,000 pounds, which yielded a gross value of $452,928.89, or $2.794 per ton; 3,116.3 tons of concentrates saved.

120-STAMP MILL.

The mill has run an equivalent of 354 days for the full mill of 120 stamps out of a possible 363 days, crushing 162,107 tons of ore, 3.81 tons per stamp per day. The cost of milling, including that of saving the concentrates, was $0.4103 per ton crushed.

GENERAL.

A large amount of development work has been done during the year, although not much payable ground has been added to the reserves. This is partially due to the small amount of ore that had actually reached the stoping stage at the beginning of the year, and the consequent urgent necessity of preparing more stopes to meet the demands of 120 stamps when the surface ore, which has supplied over one-third of the year's crushing, should be exhausted.

SULPHURET EXPENSE ACCOUNT.

[3,232.21 tons treated by Tacoma Smelting Company.]

	Cost per ton.	Cost.
Labor	$1.0705	$3,460.40
Treating charges	5.0000	16,161.08
Freight	1.6837	5,442.08
Unloading charges at Tacoma on 1,166.18 tons	.0778	251.42
Wharfage	.2027	655.14
Total	8.0347	25,970.12
Merchandise:		
Sacks, 12,400		777.40
Twine, 286 pounds		77.43
Freight on empty sacks		204.61
Buckets, 3		1.82
Envelopes for samples, 250		1.85
Needles		.55
Miscellaneous		.95
Total merchandise supplies	.3294	1,064.61
Total sulphuret expense (or $0.1668 per ton ore)	8.3641	27,034.73

The average number of men, including Indians, employed per day for the year was 167, and the average amount paid each, including the cost of board for the white men, was $3.07 per day.

700-FOOT CLAIM.

The output of ore was 85,065 tons, which yielded a gross value of $159,049.80, or $1.869 per ton.

The mining cost was $1.0976 per ton of output.

The average number of men, including Indians, employed per day for the year was 69, and the average amount paid each, including the cost of board, was $3.21 per day.

These works, so carefully and profitably managed, are of immense value to Alaska as a full and complete demonstration of what can be accomplished in low-grade ore. No one for a moment believes that on Douglas Island is the only body of such ore that can be worked to advantage. Prospecting and developing are now being conducted in many different places from 54° 40′ to Kodiak Island along the coast.

KETCHIKAN.

This place has sprung up from a salmon saltery on Tongass Narrows, and is now the headquarters of a mining district. Hundreds of claims have been located, and a vast amount of necessary preliminary work in making trails and building cabins, wharves, etc., has been done. Some claims have been so well developed that owners are justified in erecting mills to treat the bodies of ore which are now in sight. All these locations are accessible to salt water, where the largest steamships can go. There is an abundance of timber for all purposes, and in connection with the claims ample water power.

SNETTISHAM.

Thirty-five miles south of Juneau is Port Snettisham, where Mr. John N. Tisdale has been vigorously at work for the past three years. A large amount of development work has been done and a vast quantity of ore is in sight. There is water power, and a 30-stamp mill will soon be in operation.

SUM DUM CHIEF.

Near Endicott Arm is the Sum Dum Chief, Bald Eagle, and other locations. This is a fine body of rich ore, and great things are reported of what has been accomplished with a 10-stamp mill, which is run by water power. A large amount of ore is in sight.

WINDHAM BAY.

Still farther to the southward is Windham Bay, where another body of ore has been exposed. A 10-stamp mill has been erected under the management of Mr. William Ebner.

SHEEP CREEK.

At this place is a 20-stamp mill, which is operated by electric power, which can be had in abundance from a fine waterfall near by. This mill has heretofore done a great deal of work, but has been shut down most of this season. The ore bodies are considered extensive and rich enough to pay well.

SILVER BOW BASIN.

This place is only a few miles back of Juneau and the amount of work going on here is extensive. The Alaska Juneau Gold Mining Company operate 35 stamps, during the season when the water is running, on ore which pays well.

The Ebner Gold Mining Company are running 15 stamps nearly the year through. This season they have been fortunate in their development work, for they have come upon a large body of ore which gives most satisfactory results.

Not far away the Humbolt Mining Company have doubled their capacity for work and are now running 10 stamps by water power. The large hydraulic plant owned by the American Gold Mining Company has been running since 1891. It is working out the gravel in Silver Bow Basin. It is generally understood that this has paid well. There is yet a large amount of gravel to be washed.

Last year a giant was set up about a mile away from this company, on the Lervey Basin claim, which washes the gravel through a flume nearly 500 feet long.

There is a smaller basin on Gold Creek, below the Silver Bow. A Philadelphia company bought up the mining rights and ran a very long tunnel to tap it. A strong flume is being built and everything being put in shape for next season, when they, no doubt, will realize handsomely on their venture.

BERNERS BAY.

This is one of the important centers for quartz mining. It is about 50 miles north of Juneau, on Lynn Canal. Here are located the Berners Bay Mining and Milling Company, with a 40-stamp mill, run by water or steam, on ore from the Comet and Kensington lodes.

A mile from this plant is the Mellen Mining and Manufacturing Company, with a 20-stamp mill ready for operation.

Not far from this last plant is the 10-stamp mill of the Portland Alaska Gold Mining Company. This property has been idle owing to disagreement between the owners.

A few miles from the last is the Alaska Gold Mining Company of Indiana. They have now ready a 10-stamp mill to be run by water power. Close by is the Julian Mining Company of Indiana, with a 10-stamp mill, which has been at work steadily on rich ore which pays handsome dividends.

FUNTER BAY.

This place is on the north of Admiralty Island. A number of claims have been located here and a 10-stamp mill erected, but nothing has been done this past year.

RODMAN BAY.

At Rodman Bay, which is off Peril Straits, on the north coast of Baranof Island, a good deal of mining development work has been going on since November, 1899, consisting of the making of a good road about 5 miles long and the erection of a small stamp mill that distance from tide water. The plant comprises a mill of 5 stamps with copper plates, and a 6-foot Frue vanner concentrator driven by a 25-horsepower low-pressure engine.

About 100 tons of ore are being run under the stamps, showing about 5 to 7 per cent concentrates, besides a fair amount of free gold caught on the plate.

This is a low-grade proposition with an immense quantity of quartz showing, and should turn out to be a very valuable property if worked on a large scale in a business-like manner.

The claims, nine in number, are situated on the side of a mountain about 6 miles from the mouth of Rodman Bay and are cut by a deep gulch running transversely across them, showing the vein to a width of about 300 feet. It is reckoned that on one claim there are about 30,000,000 tons of quartz above the level of the proposed tunnel site. The ore, which is white quartz mixed with black slate, is soft and easily crushed.

The property is being prospected by the Rodman syndicate, which contemplates the erection of a large mill should the smelter returns be as favorable as they are expected to be.

Besides this, there are several other parties who have claims in the same bay and are doing assessment work.

SILVER BAY.

About 12 miles from Sitka, at the head of this bay, is where the first discovery and development work of a quartz lode occurred in Alaska. The claim known formerly as the Stewart Tunnel and now as the Cash mine is the place where nearly all the first settlers at Juneau began their experience in mining in this district, during the years 1878, 1879, and 1880. A 10-stamp mill was built. At first water power was tried and then steam. Wherever there was a wrong way to do a thing in the management that way was followed. The company had its head office in Portland, Oreg., for at that time the mails and all the supplies for Alaska came from that city and we had but one mail per month, and the stockholders and directors and officers were for the most part merchants and professional men and none of them miners. The president came up in the spring of 1880 and closed down everything, and there everything in the way of improvement has decayed and fallen apart excepting the smokestack to the boilers, which, though exposed to the weather for twenty years, has not scaled with rust and is apparently as sound to-day as when first erected, a very curious and interesting phenomenon. About the last thing which the Portland people did was to hire a mining expert to proceed to Sitka and examine and report on the property, for which service he was to get a large fee. He did as he agreed and had to sue for his pay. The shareholders expected dividends and not assessments.

In 1883 the claim was jumped, and in 1885 litigation began which was continued until 1898. Everything is clear now for mining people to take hold of this property and make it one of the best in Alaska. It is a fine vein of mineral, and is ideally located for successful engineering. When this property is brought to the front and its history fully written it will encourage many a prospector to persevere in the faith that is in him when he believes that he has made a good location.

On the mountain across the valley from the Cash mine, and within sight of it, a number of claims have been located, and for the past two years these have been undergoing development. More than 600 feet of tunneling has been run upon the ore, and preparation is now being made to put in an air compressor and run a working tunnel which will cut the ledge at a great depth. These people propose to find out what they have before building a mill. They have just shipped 10 tons of ore to the Treadwell mill to make a working test on average rock. They are known as the Chicago and Sitka Gold Mining Company.

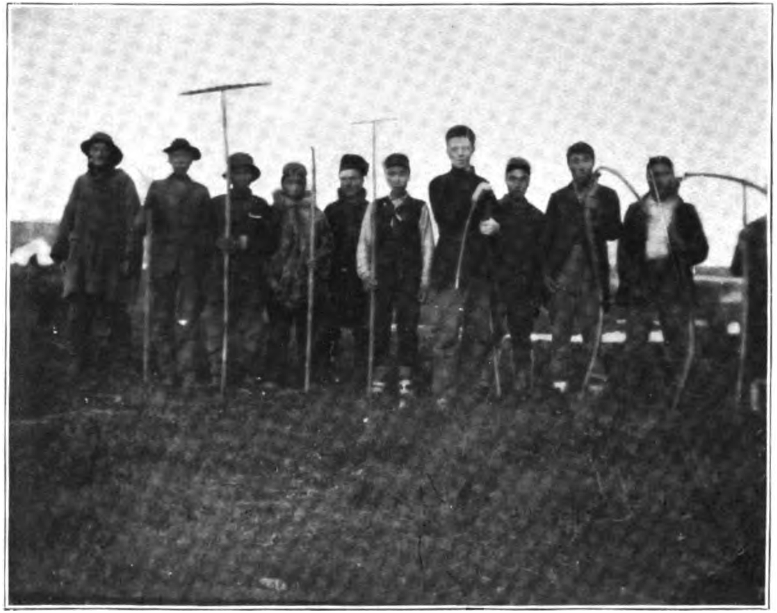
The property known as the Lake Mountain mines embracing four claims and a 5-stamp mill has been taken in hand by Rhode Island people under the management of Mr. E. Otis Smith. This plant is about 5 miles from salt water, and is high up in the mountains. They are endeavoring to get things in shape for successful working next year.

No work has been done in the Pande Basin this summer. A great many people in the East were induced to put their money into this concern. We, here in Sitka, are unable to say whether it has been a "wheel within a wheel" sort of management, and the merchants of Sitka hold accounts amounting to a large sum, which have not been paid. The property, however, has been surveyed this fall with a view to obtaining a patent.

The claims in Billy's Basin, 4 miles from Sitka, have not been worked this season. A sawmill and two small prospecting mills are on the ground.

SALISBURY SOUND.

Some men from California have located twenty-three claims, 20 miles from Sitka, on Salisbury Sound. The ore is low grade, but immense in quantity. They propose to run a 4,800-foot tunnel to test it and have taken a quantity of ore to San Francisco for examination.



ESKIMO HAYMAKERS AT UNALAKLEET, ALASKA.

NATIVES.

The third article of the treaty has this clause:

> The uncivilized tribes will be subject to such laws and regulations as the United States may, from time to time, adopt in regard to aboriginal tribes of that country.

It is now thirty-three years since Alaska was transferred under this treaty. These people have not been standing still. The missionaries have come among them and they have made great progress in the arts of peace. They are now and always have been and, if no unwise course is taken will continue to be, a self-supporting people. In no wise have they been a burden since our occupation began. Whole communities have pretty well abandoned the old style of living. Instead of the old communal house made of immense timbers and erected under prescribed rules and a costly ceremony, and which was to contain at times as many as ten or twelve families which were subject to the hit-sahtee or boss, they are now building frame houses, and most of them small ones, wherein a single family dwells.

The old-fashioned trader with his stock of blankets, Hudson Bay muskets, bullet molds, powder, flints, traps, red paint, etc., no longer exists. They wear clothes like the whites, and the younger people are generally well dressed. They buy cook and heating stoves, bedsteads, carpets, chairs, and sewing machines. Many sit down to their meals at tables covered with linen and eat from dishes with knives and forks and spoons. They are sending their children to school and these children are making good progress in learning the English language. They are on the upward tendency. They love to accumulate money and all have a natural ability to trade. The men engage in the hardest kind of labor. They become good miners, and very many of them follow this business. Others work in the canneries and in logging camps and in sawmills. They will work upon the wharves or go as deck hands or coal passers upon the steamships. Many of the women devote their time to basket weaving, tanning buckskin for moccasins, and to making curios for the tourist trade. Some of the men are clever carvers and silversmiths, and a few have entered into mercantile pursuits. During the whole Russian régime they were very little interfered with and they lived under their own rules and customs, exacting an eye for an eye and a life for a life.

Under their tribal laws the whole country was divided between the different families for fishing and hunting. Near the mouth of a stream they would build a lodge more or less substantial, where they would dry their fish and venison and pick berries and enjoy life during the summer and fall. Toward winter they would begin to gather in their villages, where their large communal houses were built. Here they spent their time in dancing and feasting in a truly barbaric manner. All this has largely changed and is changing rapidly. These people find the whites crowding into the country. They locate mining claims and build quartz mills. The bears and deer are frightened away. The fish men come in great ships. They erect immense structures which they fill with busy Chinamen. They start out steamboats and tugs and all kinds of craft with all kinds of gear to catch salmon. This is going on rapidly, and the native finds that the white man is greedy. He often does not care whether the native gets enough fish from his ancient stream for his winter food. They come to the civil and military officers and make complaint and want to know what their rights are. Congress has said very little about these natives so far, except that the whites shall not sell them whisky, and the proviso in section 8 of the organic act of May 17, 1884—

> That the Indians and other persons in said district shall not be disturbed in the possession of any lands actually in their use and occupation or now claimed by them, but the terms under which such persons may acquire title to such lands is reserved for future legislation by Congress.

They are becoming uneasy. The Chilcats once had a lucrative fur trade beyond the Chilcoot pass. It is gone. Skagway, Dyea, and Haines have sprung up, and the miners are tearing up the earth on the Porcupine beyond Cluckwan. Two canneries in their midst this year have put up 85,000 cases of salmon. They want to know whether they can take up mining claims and secure the lands near fishing streams; whether their young men can become steam engineers and pilots like white men. They find that they are held amenable to the white man's law if they commit any crime, and that they can be sued if they fail to keep a contract. The time has arrived for Congress to take action. It should remember that the reservation system has not worked well and has wrought mischief. It would not be good policy to introduce it into Alaska, where the people are self-supporting and of keen commercial instincts. They aspire to citizenship. What is to hinder Congress in holding out the incentive to them. One law in Alaska for everybody and everybody amenable to that law should be the motto. Equal rights and opportunity for all. The native is willing to take equal chances with the white man in the race. To-day he is handicapped.

SICK ESKIMOS.

An epidemic of la grippe, accompanied by measles and pneumonia, broke out early this season among the natives who inhabit the islands and shores of Bering Sea, both in Asia and America. The revenue cutter found many of the people at Atka and Attu sick. A number died upon the Seal Islands. The officers of the *Bear* found a sad state of affairs on St. Lawrence Island and the settlements which they visited in Siberia on their trip to purchase reindeer. The people were too sick and helpless to trade, and only 29 animals were obtained. The people around St. Michael and the Yukon delta, and 600 miles up the river, were in a most wretched condition. (See the communications in Appendix B.)

On this subject General Randall; Col. Joseph F. Evans, special agent of the Treasury Department; Capt. Francis Tuttle, of the *Bear;* Dr. Jackson, and the governor all agreed that immediate action was necessary. Captain Howell, in charge of the post at St. Michael, sent out details to hunt up and bury the dead and to administer medicine and food to the sick. Lieutenant Jarvis had collected a number around Nome and other points, and had them quartered near the mouth of Nome River, close by the new barracks under the command of Major Van Orsdale. This officer saw that these people were visited and fed and protected from the whites. All the supplies of food and clothing which could be spared from the reindeer station at Eaton were brought down the river and put upon the *Bear*, and in addition a large amount was purchased at St. Michael and placed aboard, to be distributed at points north of Cape Prince of Wales, and as far as Point Barrow.

The people have been left so weak and discouraged that they had not the strength nor disposition to put up food for winter. At the different points where they were helped in time they were getting better and becoming more cheerful. These Eskimos deserve our earnest solicitation and care. They stand the peers of any native stock upon the continent. Their clothing, their instruments for hunting and fishing, their kyaks and large skin boats, and their houses all bear the stamp of a high order of intelligence. They have never given us trouble. We are invading their immemorial domain, killing off the whales, the walrus, the seals, the caribou, and the fish; yea, digging up the sands and gravel beneath his humble barabara on the shores of the sea in our mad rush for gold, and if he objects we ease our consciences by inquiring, with all the domineering insolence of our race, What legal right has a native to these things anyway? One will say, "He is not a citizen; he therefore can not take up a mining claim, and if his grave or his house is in the way they must be removed;" another, "He can't become a pilot, for how can he get his papers unless he is a citizen?" In the name of justice, then, let them become citizens, so that they may at least have a legal opportunity to hold their own. Was ever a simple, hospitable people so threatened with utter extermination as these native Eskimos this summer? A deathly plague and a wild stampede of hungry and avaricious whites pouring in upon their precincts and turned loose upon them by shipload after shipload, bringing with them the arts and accomplishments of Sodom and Gomorrah. The missionaries are their best friends, and it is hoped that through their unceasing efforts and fostering care, and by the change from a hunting to a pastoral life, a remnant of a noble people may be saved.

LIGHT-HOUSE DISTRICT.

It is understood here that the Light-House Board has considered this subject, and has recommended that Alaska be made a new district. This is the only sensible plan. It needs a tender and inspector at once. To make a small appropriation and turn the work over to the thirteenth district, with headquarters at Astoria, is penurious, and is asking too much from those who are doing the work in that district. The tender *Columbine* makes a flying trip once a year to southeast Alaska, and lifts and paints the buoys and resets those which have gone adrift. She was here in July, and already in September several buoys are reported to be out of place. This may result in serious accidents. The commerce to Alaska has increased at such a tremendous rate within the last year that it now becomes necessary for Congress to give this subject careful and immediate attention. Commander William P. Day, inspector of the Thirteenth district, and Capt. W. E. Langfitt, U. S. A., of the Engineer Corps, visited Alaska on the *Columbine*, and proceeded as far as Dutch Harbor. They doubtless will report how the $100,000 which was appropriated at the last session should be spent in beginning the Light-House Service in Alaska. Every vessel that plies these waters in the winter months is taking tremendous chances of injury or destruction. The number of lives and the amount of property at stake make it imperative that the Committees on Commerce take up this subject without further delay, and treat Alaska fairly and generously.

REVENUE-CUTTER SERVICE.

The cutters *Bear*, *Perry*, *Rush*, *Manning*, *McCulloch*, *and Grant* have all been in Alaskan waters this season. The *Bear* is built for rough service and she has plenty of it. She has had very few idle hours this season. She has been especially helpful to the stricken Eskimos. Her officers have come in contact with these people for so many years that they know them and appreciate them and are ready to help them. They also render many kind services to the missionaries, some of whom are visited only once a year, and by this vessel. The *Rush* made a cruise to Attu and Atka and took the census at those places. She has sailed in Bering Sea for the protection of the seals. The work of the *Perry* has been to visit the canneries from Bristol Bay to the southeast corner of the district. The special agent of the Treasury to inspect the salmon canneries has been aboard the *Perry* most of the summer. The captain of this cutter has taken the governor on a trip through southeast Alaska to visit the natives in several of their settlements. The *Manning* and *McCulloch* have visited the Seal Islands and Nome and have taken supplies to the *Nunivak*.

The *Nunivak* is a stern-wheel river steamboat built for service on the Yukon River. She was lying at anchor at St. Michael, a sort of white elephant to the cutter service. She does not answer the purpose for which she was designed, and it would be economy to get rid of her as soon as possible. The *Grant* brought First Assistant Secretary of the Treasury, General Spaulding, to visit southeast Alaska. The people were glad to welcome him. The merchants at Skagway presented their grievances to him, and as he was upon the ground, they felt that he could take in the situation fully. The cutter service has from the first been helpful to Alaska, and such assistance has been rendered cheerfully. The time has come when a vessel should he kept in southeast Alaska throughout the year. The merchant service does not let up any, and besides there has been much smuggling of liquors from Port Simpson to be peddled out to the natives. A few captures by a cutter would break this up.

POST-OFFICE DEPARTMENT.

This Department has done its best to accommodate the people, and the task has been a difficult one. The work performed at Nome was most creditable, notwithstanding that at the outset there were many mishaps. If the mails are moved regularly it makes the people more contented. The service during the past year has much improved and has been extended almost to the utmost limits. The people on the Koyukuk are expecting four deliveries this winter. It is now certain that mail can be transported from Katmai on Shelikof Straits across country in the winter to St. Michael and Nome, and arrangements have been made to do so. Fresh demands for new routes and more frequent deliveries are sent in more persistently, but these are met in a spirit which manifests that the Department is willing to do the best thing possible. The money-order system, as it has been carried out at Nome and the new places, has afforded great relief. Even a free delivery was inaugurated for a while at Nome.

Those who have contracted to carry the mails need to be looked after to see that they live up to their contracts. On a few routes there has been a reprehensible laxness, and the mail inspectors should see to it that these peeple are brought to time. The service along the Yukon River last winter was a great improvement over the previous year.

It is hoped that the contractor from Valdez to Eagle has erected way houses and that he will be able to make his trips.

SURVEYING THE PUBLIC LANDS.

As has been said elsewhere in recounting the land laws, nothing has been done so that an entry can be made in any of the land offices by a homesteader. To begin this work properly a special amount is needed. The surveyor-general of the district has made an estimate of what it will cost to run a number of base, meridian, township, and subdivision lines, and asks $103,872 for this purpose, and it is recommended that this amount be allowed for these purposes. (See Appendix G for the details of estimates and surveyor-general's plea for making this appropriation.)

SURVEYS.

GEOLOGICAL.

The director of this Bureau is alive to the needs of all, and much has already been accomplished. Last session Congress appropriated "for continuation of the investigation of the mineral resources of Alaska, $25,000, to be immediately available." Several parties were organized and have been at work this summer, and, beyond question, the result of their labors will be instructive and profitable to those who propose further adventure in the wilds of Alaska. This Bureau has already in print a number of reports and maps which are worthy of study. They can be reached in almost any public library.

COAST AND GEODETIC.

Alaska loses a good friend by the resignation of the superintendent of this office, Dr. Henry S. Pritchett, also a member of the Light-House Board. The work has been carried on this year by the force on the survey vessels *Patterson* and *McArthur*. Those who do this work do not receive nor expect the plaudits of the multitudes, nevertheless it is being done with all the energy and conscientiousness of a Vancouver.

MAGNETIC OBSERVATORY.

Dr. L. A. Bauer, chief of the magnetic division of the Coast and Geodetic Survey, visited Sitka in September in order to select the site for a magnetic observatory which is to serve as the base station for the magnetic work in Alaska. Complaints have been received by the Coast Survey from mariners regarding local deflection of the compass which they encounter at various places in Alaska. Some of these disturbances of the compass are of such an amount as to cause a ship to go ashore if held on a compass course—e. g., at Battery Point, in Lynn Canal. It is the purpose of the Coast Survey to map out these locally disturbed areas and supply this extremely useful information to mariners. The self-registering instruments to be mounted in the observatory at Sitka will record automatically all the manifold changes and variations to which the compass needle is subject, and will serve to supply the data requisite for correcting from time to time the lines of equal magnetic variations for the use of mariners.

MARINE-HOSPITAL SERVICE.

A station has been established at Dutch Harbor under command of Dr. Dunlap Moore, assistant surgeon, Marine-Hospital Service. There is a well-fitted hospital here with sufficient number of beds and all necessary appliances. This is as it should be, for the number of sailors who pass that way is large and they will feel better to know that there is such a place ever ready for their care and treatment should they become sick or hurt.

Dr. Leonhardt represents this Bureau at Juneau and attends to all comers upon vessels plying in the southeast waters. In Appendix D to this report will be found interesting communications from both of these officers.

ALASKA NATIONAL GUARD.

A move was made last year toward organization, but the matter is still in abeyance in the departments. In the civil-government part of the bill, which was approved June 6 last, in section 2, wherein the duties of the governor are defined, is the following provision:

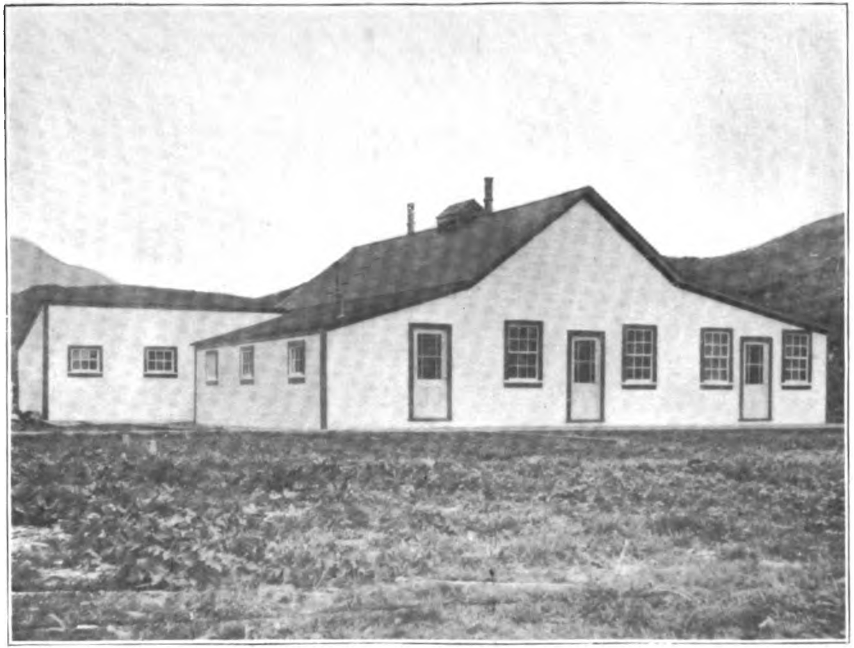
> He shall be ex officio commander in chief of the militia of the district, and shall have power to call out the same when necessary to the due execution of the laws and to preserve the peace, and to cause all able-bodied citizens of the United States in the district to enroll and serve as such when the public exigency demands.

Of course the first step is organization, for there can be no calling out nor enrolling for service unless we lay the proper foundation for the service. Many of the permanent citizens of Skagway, Juneau, Douglas, and other points are anxious to organize. It is hoped that their desires in this matter may be approved. When the war with Spain began a whole company of able fighting men organized at Skagway and tendered their services to the Government.

While the governor was in Nome for a few days in August, 104 men offered their services to the Government of the United States, as volunteers, to assist in protecting the lives and property of American citizens in the Chinese Empire. That this act and the names of these men may be made a matter of record, the communication which they drew up and signed is given as Appendix F to this report.

ANNAPOLIS AND WESTPOINT.

We have some boys here who are setting their aims correctly. They want to become admirals and generals. We think that they are made of the right material and we want them to have a chance. In the proposed legislation for these military schools Alaska has been forgotten or ignored. We respectfully call the attention of Senators Hale and Hawley and Representatives Boutelle and Hull, chairmen of the committees who have these matters in charge, and ask that they bring the subject before their committees to the end that Alaska may be allowed proper representation at these schools.



UNITED STATES MARINE HOSPITAL, DUTCH HARBOR, ALASKA.

NAVY.

This Department has been represented this past summer by the gunboat *Wheeling*, cruising in Bering Sea and in the Gulf of Alaska to Sitka. It can be well understood that Alaska, from her great length of coast line bending like a giant sickle and embracing the whole north Pacific Ocean, must become more and more dependent upon our Navy as our commerce increases. Japonsky Island in Sitka Harbor was set aside by the President's proclamation in 1891 as a naval reservation. There is here now a new wharf just completed, and shell house and a magazine. The Navy should establish all of its plants upon this island, which is so well located for its purposes. The sick bay and the shops and storehouses in the town will soon be unfit for use. They are not worthy of repair. New structures should be built upon Japonsky. The coal depot for the Government vessels should be there also.

MARINES.

Our recent history has taught us what brave men this corps possesses. Those who have been stationed in Sitka are as brave as their fellows, only they have lacked opportunity. Their presence here gives a sense of protection which has not always been felt in Sitka. The quarters in the town are kept in the best sanitary condition and the grounds in beautiful trim. But they are entirely too cramped for so many men. Instead of adding to these, it would be best to build entirely new quarters, with other naval buildings now needed, upon Japonsky Island. This is an ideal location, affording plenty of room for drill grounds, shops, gardens, and pasture, and yet within easy distance for every purpose of defense.

ARMY.

On the 19th of last January the Secretary of War, under General Orders, No. 8, separated Alaska from the Department of the Columbia and created it into the Military Department of Alaska. Col. (since General) George M. Randall was assigned to be the commander, with headquarters at St. Michael. Posts have been located at Skagway, Fort Egbert (Eagle City), Fort Gibbon, St. Michael, Nome, and Valdez. A tremendous amount of work has been done in transportation and in building everything upon new foundations. The locations have been well selected, and care has been taken to make the buildings as convenient and comfortable as possible. General Randall had his waking hours fully occupied when he reached Nome. His presence with the force behind him was most timely. He certainly managed the hostile contestants with great tact until he was relieved by the arrival of the judge and the other civil officers. The Army can do great work for Alaska in the way of exploration, and this is fully intended in the Secretary's order. (See Appendix E.)

TELEGRAPHS.

The act making appropriation for the support of the Regular and Volunteer Army for the fiscal year ending June 30, 1901, approved May 26, 1900, contained a paragraph making appropriation of

$450,550 for military telegraphs and cables. The transports had already in August conveyed most of the material to the distributing points. Major Green, the chief signal officer, with his force started to take it along the proposed line of construction. St. Michael and Nome will be connected by a submarine cable 132 miles in length, and St. Michael and Unalakleet by a similar cable, 50 miles. The problem at these places is to overcome the action of the ice upon the shores. At Unalakleet the line will start east across country to the Yukon, and then up the north bank until about the neighborhood of Rampart. From this point it may take a detour to the south in order to avoid the Yukon flats. It will be but a short distance from Eagle to the boundary line, where connection can be made with the Canadian system. It is part of the plan to connect Eagle and Valdez; indeed, at this writing many miles of the line have been erected from Valdez. This will be a blessing to all and will go far in giving Alaska relief at places where everybody has had to wait for a year.

CABLES.

To make the work complete we need to be connected by cable with Cape Flattery. A cable to the Philippines by way of Alaska was brought to the attention of the Committees on Commerce last winter. There are so many things in favor of this northern route that Congress, we believe, would make no mistake in giving its approval as against the more southern one. The great commerce of the future to the Orient will draw closer each year to Alaska, and when proper aids to navigation are placed at Unamak Pass and a few other points the permanent lines will no doubt take the shortest and best protected course and go north of the Aleutian Chain. The commerce of the world will thus be best served by laying the cable along the northern route.

FUR SEALS.

The governor did not have opportunity to land upon either of the Seal Islands and make inquiry into the operations upon the ground this season. The captains and other officers of the revenue cutters which have called at these rookeries all bear the same testimony, namely, that the herds at the various hauling grounds are smaller each year. This year the company were allowed to kill younger males, and in all they took about 24,000 pelts. At this rate the industry will soon cease altogether.

In last year's report the branding of all the females was urged as a final effort to preserve the rookeries from the destructive methods of the Canadian pelagic sealers. A wail went up from the owners of these vessels centered at Victoria that this was a most inhuman practice. We would expect just such a refrain if 80 per cent of the catch of their vessels was rendered valueless by this method of branding. The tests which have been made thus far can hardly be considered satisfactory or conclusive, for they have been performed clumsily with the rudest appliances, and by persons of little or no experience. If the Department determines to attempt a further test, a few experts should be selected and the whole business intrusted to them. Many are in favor of killing off all the herds and going out of the business altogether. This would be a pity, but more would favor it rather than have our Government buy up all the Canadian hulks at fancy prices, which have been engaged in this work of destruction. We are at a loss to understand why Great Britain will become a party to this when she has steadily had $3 benefit out of the industry to $1 for the United States.

The special agent, John M. Morton, died at St. Paul Island in August. He put in many years' service, and was liked by the natives on account of his kindly disposition toward them.

SEA OTTERS.

The hunting of these animals should be prohibited for a term of years, for the reason that they are nearly extinct and that it keeps the natives who engage in it miserably poor and always in debt to the store which outfits them and conveys them to the hunting grounds. These people should be constrained to seek work in the canneries and in the mines and to cultivate gardens. If they labored for 25 cents a day they would be in more money than they now earn by hunting this animal. But they can earn very much more, and the cannery people will be pleased to employ them when they manifest a determination to go to work. It is recommended, therefore, that the Secretary of the Treasury take this matter up and issue his orders early so that all concerned can have time to adjust their affairs accordingly.

REINDEER.

The report of the relief expedition to the whalers caught in the ice near Point Barrow, under the lead of Lieut. D. H. Jarvis, must stand as a full demonstration in favor of the utility of the reindeer for man's needs in an arctic climate and as a reasonable argument in favor of its introduction and propagation. This report is published under the Treasury Department. It is the Report of the Cruise of the United States Revenue Cutter *Bear* and the Overland Expedition for the Relief of the Whalers in the Arctic Ocean, from November 27, 1897, to September 13, 1898, Treasury Department, Document No. 2101, Division of the Revenue-Cutter Service.

In connection with this fascinating report of Lieutenant Jarvis and his fellow-officers should be read the Ninth Annual Report on Introduction of Domestic Reindeer into Alaska by Sheldon Jackson, LL. D., general agent of education in Alaska. These Government publications are recommended for perusal, for the information is not only interesting but reliable. The public at large seem to misapprehend the problem largely, no doubt, on account of paragraphs which appear in the newspapers from time to time which are written in ignorance of the facts and, it would seem, in a spirit of viciousness.

It can not be too often repeated that the shipment of gelded reindeer trained to the sled from Norway in the winter of 1897 and 1898 to draw provisions from salt water to the starving miners upon the Klondike was in no way connected with the problem of shipping reindeer from Siberia into western Alaska for breeding. The controlling idea is to furnish our native people, who are often near starvation, with an animal that has nearly all the good things of life for them. The natives in Siberia do not starve, because they have herds of these deer to supply their wants.

Since the Nome discovery and stampede the problem has assumed greater significance. If gold can be dug, the white man proposes to live there, and he is now competing for the pelts and the flesh and the strength of those which are trained to draw loads. Our concern to protect the native should become more earnest in the face of new and no doubt permanent obstacles and hindrances.

The whole number of deer is put down at 2,837. The industry began in 1892 with a shipment of 171.

It is proper here to mention that Artisarlook, who so nobly turned in his herd of deer to Lieutenant Jarvis, died this summer at his home beyond Cape Nome, leaving a herd of 500 animals. He was one of the first natives to receive instruction and to whom a herd was intrusted. It would be a very proper thing for Congress to instruct the Secretary of the Treasury to erect an appropriate stone inscribed with a record of his unselfishness and bravery to stand there as a memorial and as an encouragement for others to do likewise when occasion may require.

FOX FARMING.

The United States Statutes at Large, Forty-Fifth Congress, 1877–1879, volume 20, page 383, provides:

> That authority be, and is hereby, given to the Secretary of the Treasury to lease at his discretion, for a period not exceeding five years, such unoccupied and unproductive property of the United States under his control for the leasing of which there is no authority under existing law, and such lease shall be reported annually to Congress.

This is the authority in law under which the Treasury Department has been leasing islands for the purpose of breeding foxes. The only other legislation on the subject is a proviso in section 10 of the act of May 14, 1898, extending the homestead laws, etc. It is—

> Islands leased or occupied for the propagation of foxes be excepted from the operation of this act.

Capt. W. F. Kilgore has given this matter attention this season and reports that thirty-five islands have been leased and that he collected $2,200 rentals. This is an interesting subject, and many people are making inquiry about it. It is recommended that Congress call upon the Secretary of the Treasury for a special report which shall embody the laws and regulations thereunder, leases, sums collected, and all the details and growth of the industry, to be accompanied by illustrations.

INSANE.

In the act approved June 6 last Congress, in defining the duties of the governor, says:

> He shall, subject to the direction and approval of the Secretary of the Interior, advertise for and receive bids and, in behalf of the United States, contract from year to year with a responsible asylum or sanitarium west of the main range of the Rocky Mountains submitting the lowest bid for the care and custody of persons legally adjudged insane in said district of Alaska; the cost of advertising for bids, executing the contract, and caring for the insane to be paid, until otherwise provided by law, by the Secretary of the Treasury, out of any money in the Treasury not otherwise appropriated, on accounts and vouchers duly approved by the governor and the Secretary of the Interior.

Accordingly the Secretary of the Interior was on June 27 informed that there was an insane man in jail at Sitka whose condition was pitiable, and directions were asked. The Secretary's reply in part is as follows:

> With a view to carrying into effect in the most expeditious manner the provisions of the act above quoted, I have this day authorized the insertion of the accompanying advertisement five times in the following papers: The Chronicle, San Francisco, Cal.; the Evening Express, Los Angeles, Cal.; the Post-Intelligencer, Seattle, Wash.; the Ledger, Tacoma, Wash.; the Morning Olympian, Olympia, Wash.; the Morning Oregonian, Portland, Oreg., and the Idaho Statesman, Boise, Idaho, specifying that proposals will be received by you at Sitka until 2 o'clock p. m. August 15, 1900, from responsible asylums or sanitariums west of the main range of the Rocky Mountains, for the care and custody, etc., of persons legally adjudged insane in the district of Alaska.
>
> After consideration of such proposals as are received in response to this advertisement you will forward the same to the Department together with a recommendation for award of the contract.
>
> There is also inclosed herewith a memorandum of the addresses of several insane asylums in the States west of the Rocky Mountains, with whom you can communicate directly.

The following is the memorandum:

> Napa State Hospital for the Insane, Napa, Cal.; Stockton State Insane Hospital, Stockton, Cal.; Agnew State Hospital, Agnew, Cal.; Southern California State Hospital, Patton, Cal.; Mendocino State Hospital, Mendocino, Cal.; Oregon State Insane Asylum, Salem, Oreg.; Mindsease Sanitarium, Portland, Oreg.; Western Washington Hospital for the Insane, Fort Steilacoom, Wash.; Eastern Washington Hospital for the Insane, Medical Lake, Wash.

On August 20 the Secretary was informed that no bids in response to the newspaper advertisements had been received up to that date. His reply, dated September 19, is as follows:

> Your letter has been received stating that in response to Department advertisement of July 18, 1900, no proposals have been received from asylums or sanitariums west of the main range of the Rocky Mountains for care and custody of persons legally adjudged insane in the district of Alaska.
>
> In response thereto I have to state that in view of the failure of the Department to secure any bids for such service, after due advertisement through the medium of the press, it is deemed advisable that you prepare a circular letter setting forth exactly the character of the service desired, the number of persons to be maintained, male and female, the probable period for such detention, etc., and that the same be sent to the following asylums for the insane and such others as may be within your knowledge.
>
> * * * * * * *
>
> Any proposals that may be received you will forward to the Department with a recommendation for the acceptance of the one which, in your judgment, is most advantageous considering the interests of the Government, with a view to the award of contract therefor by the Department.

The suggestion of the Secretary was anticipated and a circular letter like the one which he suggested was sent to all the institutions in the above memorandum on August 28. It is as follows:

> *To the Superintendent of the ——— Insane Asylum.*
>
> Dear Sir: The act of Congress which was approved June 6, 1900, "making further provision for a civil government for Alaska, and for other purposes," provides that "the governor may receive bids, and in behalf of the United States contract from year to year with a responsible asylum or sanitarium west of the main range of the Rocky Mountains submitting the lowest bid for the care and custody of persons legally adjudged insane in the said district of Alaska."
>
> Can you not, at your earliest convenience, send me a bid in accordance with the spirit and letter of this statute? For there are a number of persons who have been declared legally insane, and should be immediately removed from the jails and prisons to a place especially fitted for their care, comfort, and treatment.
>
> Those now in custody are mostly men.
>
> Very respectfully,
>
> John G. Brady, *Governor of Alaska.*

In response to these letters but one bid has been received, and that from a private institution, and three letters of inquiry.

PUBLIC SCHOOLS.

Section 28 of the act is—

> The Secretary of the Interior shall make needful and proper provision and regulations for the education of the children of school age in the district of Alaska, without reference to race, and their compulsory attendance at school, until such time as permanent provision shall be made for the same.

He can not obey this law if Congress does not appropriate the money to bear the expense. Many communities are now totally neglected because the Commissioner of Education has not the means to establish a school and pay the salary of a teacher. The governor in all his reports has told of this and has plead for at least $60,000 as an annual appropriation, but the committee has not allowed an increase of a dollar beyond what it has heretofore annually approved, namely, $30,000. The people in the large towns which are willing to incorporate will fare well, for the law allows these towns one-half of the license money which may be collected within the limits of the corporation to be used for school purposes. Juneau and Skagway have become incorporated and their funds for all school purposes will be ample. It is estimated that Juneau, for instance, will have $15,000. This is one-half the amount that has annually been set apart for the whole of the district. The amount for Skagway will be as large as that for Juneau, and no doubt larger, as Juneau claims less than 1,500 inhabitants, and consequently the liquor sellers have paid but $1,000 each for a license, while in Skagway the number of inhabitants is much greater than 1,500, and consequently the saloon men must pay $1,500 license each. Here, then, we will have two towns spending as much money for schools as Congress is willing to vote for all the rest of Alaska. This is hardly fair to the children beyond incorporated limits. If 50 per cent of the license money which is collected, excluding the amount from incorporated towns, could be used by the Secretary of the Interior, he could nearly comply with the law in furnishing the proper educational facilities for the children of school age who should be in school. If Congress will not adopt this method of providing the expenses of schools, it is recommended, then, that it be urged to increase its appropriation to $75,000. Under the encouragement which the law gives, the people of Skagway and Juneau have gone vigorously to work on their schools and already have them in operation for the year. At this writing the details are not at command for this report.

Notaries public in and for the District of Alaska.

[Appointed by John G. Brady.]

Name.	Date of commission.	Term of office.	Name.	Date of commission.	Term of office.
R. F. Lewis	July 28, 1897	Two years.	M. E. McEnany	Dec. 6, 1897	Two years.
J. T. Jones	do	Do.	J. G. Price	Dec. 9, 1897	Do.
A. J. Campbell	Aug. 4, 1897	Do.	D. L. Bishop	Dec. 15, 1897	Do.
John R. Winn	Aug. 14, 1897	Do.	S. A. Keller	Nov. 5, 1897	Do.
Charles D. Rogers	Aug. 30, 1897	Do.	F. D. Kelsey	Jan. 4, 1898	Do.
W. C. Boyed	do	Do.	J. H. Dennis	Jan. 11, 1898	Do.
A. C. Van Doren	do	Do.	Duncan B. Monteith	Jan. 18, 1898	Do.
John C. Heid	Sept. 4, 1897	Do.	Saml. L. Lovell	Feb. 3, 1898	Do.
Arthur K. Delaney	do	Do.	Frank D. Boyer	Feb. 28, 1898	Do.
Omar J. Humphrey	Sept. 24, 1897	Do.	Henry Drum	do	Do.

Notaries public in and for the District of Alaska—Continued.

Name.	Date of commission.	Term of office.	Name.	Date of commission.	Term of office.
F. E. Fuller	Feb. 28, 1898	Two years.	Sam C. Dunham	June 8, 1899	Two years.
Phil Abrahams	do	Do.	J. Argent Armitage	June 23, 1899	Do.
John McNally	do	Do.	Louis K. Pratt	June 27, 1899	Do.
I. M. Long	do	Do.	J. R. McKeand	July 1, 1899	Do.
O. A. Johensen	Mar. 3, 1898	Do.	William A. Bryant	do	Do.
M. L. Washburn	Mar. 3, 1898	Do.	C. H. Riggins	July 3, 1899	Do.
J. M. Hays	do	Do.	J. C. Cantwell	July 5, 1899	Do.
W. R. Curtis	Feb. 25, 1898	Do.	Charles E. Repath	July 6, 1899	Do.
Wm. H. Kritzer	Mar. 25, 1898	Do.	William A. Kelly	July 15, 1899	Do.
M. J. Cockran	do	Do.	Arthur F. Wines	do	Do.
Charles S. Rosener	do	Do.	J. W. Young	July 20, 1899	Do.
Walter Church	do	Do.	W. B. Stout	do	Do.
Charles O. Bates	do	Do.	William H. Whittlesey	July 26, 1890	Do.
T. J. Watson	Mar. 28, 1898	Do.			
Edward de Groff	Mar. 31, 1898	Do.	Harry A. Smith	do	Do.
John Tummuis	May 7, 1898	Do.	D. T. Hatch	July 31, 1899	Do.
W. H. Moore	July 11, 1898	Do.	S. T. Penberthy	Aug. 2, 1899	Do.
Henry E. Battin	do	Do.	Charles C. Jay	Aug. 5, 1899	Do.
A. G. McBride	do	Do.	Albert A. Hang	do	Do.
Alfred J. Daley	July 15, 1898	Do.	John R. Wing	Aug. 14, 1899	Do.
C. S. Sargent	do	Do.	A. P. Mordaunt	Aug. 15, 1899	Do.
J. F. Hobbs	do	Do.	James C. Blaine	Sept. 4, 1899	Do.
H. J. Miller	July 20, 1898	Do.	A. K. Delaney	do	Do.
Nestell B. Scribner	July 22, 1898	Do.	J. E. Snevely	July 31, 1899	Do.
Willard S. Conger	do	Do.	Frederick L. Bates	Aug. 3, 1899	Do.
Sol. Ripinsky	Aug. 1, 1898	Do.	E. G. Lewis	Aug. 7, 1899	Do.
R. W. Jennings	do	Do.	Charles B. Allen	do	Do.
Robley D. Weldon	do	Do.	Henry W. Wallbridge	do	Do.
William R. Johnston	do	Do.	H. B. Hastings	Aug. 14, 1899	Do.
W. T. Hall	Aug. 3, 1898	Do.	Elmer T. Townsend	Aug. 17, 1899	Do.
H. B. Allen	do	Do.	Francis McNulty	Aug. 18, 1899	Do.
Charles E. Ingersol	Aug. 18, 1898	Do.	S. J. Call	Aug. 19, 1899	Do.
M. Grinnell	do	Do.	Alonzo Rawson	Aug. 23, 1899	Do.
E. D. Sanxay	Sept. 3, 1898	Do.	Albert P. Mordaunt	do	Do.
D. A. McKenzie	do	Do.	W. H. Hayden	do	Do.
C. S. Blackett	Sept. 5, 1898	Do.	C. R. Beeman	Aug. 24, 1899	Do.
S. D. Davis	do	Do.	A. S. Canney	do	Do.
T. J. Donohoe	do	Do.	Kenneth M. Jackson	do	Do.
Samuel I. Pope	June 1, 1898	Do.	Charles S. Rosener	Aug. 25, 1899	Do.
Alfred E. Maltby	Sept. 20, 1898	Do.	O. Joseph Comtoys	Aug. 28, 1899	Do.
John Lyons	Sept. 23, 1898	Do.	F. W. Mettler	Aug. 30, 1899	Do.
George M. Miller	Sept. 27, 1898	Do.	H. N. Nice	Sept. 7, 1899	Do.
Eugene J. Chamberlain	Nov. 1, 1898	Do.	John G. Heid	Oct. 4, 1899	Do.
			W. C. Boyd	do	Do.
J. J. Beattie	Dec. 12, 1898	Do.	John F. Dillon	do	Do.
J. Sullivan	do	Do.	H. T. Harding	do	Do.
W. C. Pedlar	Dec. 16, 1898	Do.	Fred. G. Whitehead	Oct. 18, 1899	Do.
Frank A. Brooks	Jan. 6, 1899	Do.	Thomas W. Hanmore	Oct. 20, 1899	Do.
John B. Denny	Jan. 9, 1899	Do.	William B. Dean	Oct. 24, 1899	Do.
E. O. Sylvester	do	Do.	John Goodell	Nov. 2, 1899	Do.
H. A. Day	Jan. 14, 1899	Do.	Ernest E. Gilmer	Nov. 18, 1899	Do.
Morton E. Stevens	Jan. 21, 1899	Do.	Virgil Moore	Nov. 21, 1899	Do.
J. H. Cobb	do	Do.	John B. Zimdars	Nov. 27, 1899	Do.
Fred. D. Nowell	do	Do.	Lewis Garrison	Dec. 1, 1899	Do.
George W. Hill	Feb. 3, 1899	Do.	James E. Fenton	Dec. 2, 1899	Do.
Scott E. King	Mar. 11, 1899	Do.	Daniel W. Bass	do	Do.
C. M. Summers	Mar. 24, 1899	Do.	W. H. Bard	do	Do.
J. Earl Brown	Mar. 31, 1899	Do.	M. E. McEnany	Dec. 6, 1899	Do.
I. N. Wilcoxsen	Apr. 1, 1899	Do.	Hans. Chr. Pande	Dec. 14, 1899	Do.
T. R. Lyons	Apr. 6, 1899	Do.	J. D. Thagard	do	Do.
Lewis L. Bowers	Apr. 12, 1899	Do.	Walter Church	Dec. 16, 1899	Do.
J. C. Downing	Apr. 19, 1899	Do.	W. G. Dickinson	Nov. 21, 1899	Do.
Philip Blumauer	do	Do.	M. H. McLellan	Dec. 16, 1899	Do.
Walton D. McNair	Apr. 26, 1899	Do.	Eugene L. Scott	do	Do.
David G. Barstow	May 9, 1899	Do.	R. T. Lyng	Dec. 30, 1899	Do.
Albert Lascy	do	Do.	Oscar Gard	Jan. 2, 1900	Do.
Mary J. Tustin	May 19, 1899	Do.	Thomas G. Wilson	do	Do.
T. R. Needham	May 22, 1899	Do.	Martin V. Loy	Jan. 31, 1900	Do.

[Appointed by Albert D. Elliot, acting governor.]

C. G. McLeod	Jan. 31, 1900	Two years.	Charles A. Reynolds	Feb. 15, 1900	Two years.
John R. Beegle	do	Do.	Oliver Olsen	Feb. 16, 1900	Do.
H. H. Hildreth	Feb. 8, 1900	Do.	George D. White, jr.	do	Do.
Samuel L. Lovell	Feb. 3, 1900	Do.	Dr. Willis E. Everette	do	Two years; canceled Mar. 17.
F. T. Merritt	Feb. 14, 1900	Do.			
Allan R. Joy	do	Do.			
John D. De Fries	Feb. 15, 1900	Do.	C. W. Turner	Feb. 24, 1900	Two years.
William F. Shedd	do	Do.	Phil. Abrahams	Feb. 28, 1900	Do.
Edwin B. McCowan	do	Do.	Francis Tagliabue	Feb. 19, 1900	Do.

Notaries public in and for the District of Alaska—Continued.

Name.	Date of commission.	Term of office.	Name.	Date of commission.	Term of office.
James C. Waugh	Mar. 3, 1900	Two years.	J. G. Price	Apr. 16, 1900	Two years.
J. L. Waller	do	Do.	E. Grimm	Apr. 10, 1900	Do.
Edwin Englestad	Mar. 5, 1900	Do.	Edmund T. Hulaniski.	Apr. 10, 1900	Do.
Geo. B. Swinehart	Feb. 27, 1900	Do.	Martin P. Blum	Apr. 12, 1900	Do.
Samuel D. White	Feb. 14, 1900	Do.	A. E. Williams	do	Do.
Charles S. Aldrich	Feb. 15, 1900	Do.	Edward R. Miles	Apr. 14, 1900	Do.
Franklin A. Benjamin.	do	Do.	C. B. McConnell	Apr. 15, 1900	Do.
Charles W. Watts	Feb. 21, 1900	Do.	R. L. P. Wallace	Apr. 19, 1900	Do.
John I. Parker	Mar. 2, 1900	Do.	James Kiefer	Apr. 21, 1900	Do.
Mervin P. Hunt	Mar. 5, 1900	Do.	W. V. Rinehart, jr	Apr. 23, 1900	Do.
George A. Verge	Mar. 17, 1900	Do.	Endre M. Cederbergh.	do	Do.
Clyde E. Clark	Mar. 20, 1900	Do.	J. T. Hamilton	do	Do.
Harry F. Parker	Feb. 27, 1900	Do.	J. Potter Whittren	do	Do.
Charles S. Johnson	Apr. 2, 1900	Do.	George W. Hopp	do	Do.
F. D. Kelsey	do	Do.	Eben B. Williams	Apr. 24, 1900	Do.
Henry B. Lind	do	Do.	C. M. Thuland	Apr. 25, 1900	Do.
R. Blix	do	Do.	Joseph A. Leonard	do	Do.
W. T. Hoffman	Feb. 15, 1900	Do.	John B. Wright	Apr. 26, 1900	Do.
O. A. Thornton	Mar. 17, 1900	Do.	Ralph Simon	Apr. 28, 1900	Do.
James Fish	Apr. 9, 1900	Do.	J. Monroe Latimer	May 1, 1900	Do.
Oscar Fish	do	Do.	F. Hugh Whitney	do	Do.
J. S. Tooker	do	Do.	Alfred J. Daly	do	Do.
William L. Distin, jr.	do	Do.	Eugene B. White	Apr. 23, 1900	Do.
Allison Ware	do	Do.	Charles A. Squire	Apr. 24, 1900	Do.
Samuel T. Jeffreys	do	Do.	Y. R. Parks	Apr. 26, 1900	Do.
Edward de Groff	do	Do.	Fred. L. Keenan	May 1, 1900	Do.
George D. Schofield	Mar. 28, 1900	Do.	Burton E. Bennett	Mar. 30, 1900	Do.
W. S. Chapman	Apr. 9, 1900	Do.	John W. Whitham	do	Do.
N. B. Solner	do	Do.	Lewis E. Benson	Apr. 9, 1900	Do.
George H. Wintermantle.	do	Do.	J. L. Romer	May 9, 1900	Do.
Michael Phillips	Feb. 28, 1900	Do.	D. H. Jarvis	May 16, 1900	Do.
George D. Claggett	Apr. 10, 1900	Do.	Charles H. Cosgrove	May 19, 1900	Do.
J. E. Hawkins	Apr. 12, 1900	Do.	Peter Gallagher	May 25, 1900	Do.

[Appointed by John G. Brady, under the act approved June 6, 1900.]

G. M. Rose	July 18, 1900	Four years.	A. J. Bruner	Aug. 10, 1900	Four years.
Isaac J. Tonlinson	Aug. 16, 1900	Do.	A. V. Dedrick	Aug. 11, 1900	Do.
J. W. Albright	Aug. 8, 1900	Do.	H. E. Shields	do	Do.
C. S. Hannum	Aug. 9, 1900	Do.	Arthur G. Thompson	do	Do.
James W. Griffin	Aug. 10, 1900	Do.	P. H. Watt	do	Do.
Henry Sheldon	do	Do.	S. A. Keller	do	Do.
Philip C. Dibert	do	Do.	H. A. Day	do	Do.
R. W. Bowen	do	Do.	Elex Allerdice	do	Do.
Chas. Udell	do	Do.	Fred B. Chandler	do	Do.
A. J. Green	do	Do.	Ben. F. Tuffs	do	Do.
J. F. Hobbes	do	Do.	T. S. Thompson	do	Do.
H. B. M. Miller	do	Do.	Jno. H. Kelley	do	Do.
E. E. Cunningham	do	Do.	C. A. Noyes	Aug. 13, 1900	Do.
H. L. Atkinson	do	Do.	H. L. Van Winkle	do	Do.
Stephen B. Howard	do	Do.	W. J. Milroy	Aug. 18, 1900	Do.
W. P. Butler	do	Do.	N. Gray	Aug. 28, 1900	Do.
Chas. E. Dickey	do	Do.	Chas. E. Hastings	Aug. 31, 1900	Do.
J. Cousby, jr.	do	Do.	M. F. Brown	do	Do.
Wm. H. Schooler	do	Do.	V. L. Bevington	do	Do.
S. J. Lazarus	do	Do.	Ralph H. Smith	Sept. 4, 1900	Do.
W. J. Palmer	do	Do.	T. J. Donohoe	Sept. 18, 1900	Do.
A. H. Kenaga	do	Do.	T. R. Lyons	do	Do.
C. S. Blackett	do	Do.	D. A. McKenzie	Sept. 20, 1900	Do.
J. Sullivan	do	Do.	Geo. F. Hooper	do	Do.
Geo. A. Leakley	do	Do.			

CENSUS.

The Director of the Census Office, soon after his appointment, turned his attention to Alaska, knowing well that it would be one of the most difficult fields from which to get correct and reliable returns. He split the district in two parts and intrusted the work to two special census agents, William A. Kelly for the southern part and Sam. C. Dunham for the northern. Professor Kelly has lived in Alaska many years. He has been an educator most of his life. Since coming to

Alaska, he spent four years as United States commissioner at Fort Wrangell, but most of his time he has been superintending a large industrial training school for the natives at Sitka. He is also a member of the Alaska bar.

Mr. Dunham has long been connected with the Department of Labor. He was sent out to study the conditions in the Klondike and spent the winter of 1897 and 1898 upon the Yukon. His reports, which have appeared in the monthly bulletins from time to time, testify to his ability. Mr. Dunham also has poetic inspirations which have given delight to many a lonesome miner on the Yukon.

To these men has the work of the census for Alaska been committed, and they have gone at it with a will. It is a matter of regret that some definite figures in regard to the population are not obtainable, so that they might go with this report. The work of the enumerators is not all in, and what is in can not be tabulated here. We must content ourselves until all the details are properly classified at the Census Office.

Attention is called to the communications in Appendix C, and especially the map of the Yukon Delta, the work of an Eskimo, and kindly furnished by Rev. Y. M. Treca, of Holy Cross Mission. The enumerator found 3,055 souls within this area.

DISTRICT HISTORICAL LIBRARY AND MUSEUM.

Section 32 of the new law makes provision for this institution, and we all feel grateful to Senator Carter for his interest in framing this law.

In the governor's office there are 1,200 bound volumes, a good number of volumes and pamphlets unbound, charts, and maps, but all uncatalogued. It is proposed to arrange these properly and make them the nucleus of the library and museum.

On the 8th of May last, at the Waldorf-Astoria, in New York City, at a banquet tendered the governor of this District, a bust of the Hon. William H. Seward was presented to the people of Alaska by Mr. Francis L. Loring. Mr. Loring is a banker of New York City. He knew Mr. Seward long before he became the great Secretary of State and felt inspired by his example. The bust is of life size, in marble, by the artist C. D. Ives. It was made from life in 1857 for the merchant prince of his day, Mr. A. T. Stewart, at a cost of $5,000. It passed to Judge Hilton, and after his death was sold with other art treasures at public auction. It was bought up by Mr. Loring with the instant determination that its next and last resting place should be Alaska, which is Seward's monument. It should be mentioned in appreciation of Mr. Loring's generosity that not only the bust, but its packing and shipment to Sitka have been paid for by him. This bust will be one of the ornaments of the library and museum.

TERRITORIAL GOVERNMENT.

Twelve years ago A. P. Swineford, at that time governor of the District, championed the cause of Territorial organization, and appeared before the Committee on Territories and argued the question ably. All these years have passed and still we have no such organization. There must be some valid reason for it. In brief, Congress must take the blame. In trying to make this clear, a few extracts from Governor Swineford's vigorous speech before the committee will be interesting reading and will help to solve the problem:

> That this anomalous organic act was expressly designed to hinder and retard rather than to encourage and promote the settlement and development of the Territory is a question that scarcely admits of a doubt; the express withholding of the right to acquire titles to homes under the homestead laws or otherwise is explainable on no other theory.
>
> It is idle to expect rapid settlement and development under such circumstances. The present form of civil government for Alaska is but little preferable to the military and naval satrapies which preceded it. Had such been the express purpose of Congress it could have passed no law better calculated to retard the settlement and delay the development of Alaska's incomparably great natural resources than is to be found in the novel form of civil government set up by the organic act of May 17, 1884, shorn as it was, and still is, not only of the vital principle of representation, but still more remarkable in that it withholds the right to acquire, by purchase or otherwise, ownership in the soil. It must be apparent to you, gentlemen, as it is plain to me, that such an organic law could only have been enacted in the interest of the enemies of Alaska's welfare and progress; could only have found inspiration in the minds of those whose interests will be best subserved by delaying as long as possible the settlement and development of a country inconceivably rich in the number and variety of its natural resources.
>
> The CHAIRMAN. What do you think would be the probable result of passing the proposed legislation upon the increased prosperity of Alaska?
>
> Mr. SWINEFORD. It would encourage immigration to a very large extent. I have no doubt that while the immigration to Alaska would not bear comparison with that to Dakota, being so far off, that if at the time of the purchase of Alaska Congress had established a civil government in that country, it would have shown before this a most wonderful development. If, instead of setting up a military or naval government, with a military or a naval commander whose word was law, and practically driving the people out, they had given it a regular form of civil government, I have no doubt that Alaska would have had by this time a large population. But nobody wants to go to a country where they can not acquire titles to lands or homes.
>
> In the town of Juneau, where Mr. Reed, here, lives, there are probably ten, twelve, or fifteen hundred people. They have ten or fifteen general stores, waterworks, theater, churches, schools, and everything that is usually found in a flourishing frontier town. It is opposite to Douglas Island, and the town is growing rapidly, with an intelligent population—a better population than you will usually find on the frontier. Yet not a single man has a title to the land upon which his building stands. Several thousand claims to lands and town lots in the Territory have been recorded, and yet in the whole Territory there are only twenty-one fee-simple titles, and these are Russian titles, which were confirmed in the protocol to the treaty purchase.

The withholding of the land laws is the real difficulty to-day. A Territorial government means taxation, and Alaska to-day is not in a condition to stand it. An entire population who are simply squatters, with a very few exceptions, is not able to bear the burden of an expensive government. Suppose Congress should appoint assessors and collectors, how much money could be taken to-day from the people on the valuation of their personal effects and their dwellings, considered as personal property? The cannery people and mill owners are complaining now that the license tax is too high compared with taxes elsewhere. The people of Alaska are not seeking to avoid taxation, but the majority of the permanent residents who have property well understand that a Territory would be too great a burden just yet. If Congress will only treat the people in Alaska as it has the people in every other part of the Western frontier in regard to land titles, it can be assured that within a few years there will be a population here who will gladly accept the burden of governing themselves.

A DELEGATE.

It was taken for granted at the last session of Congress that after the courts which were created had time to organize, and the judges had had time to appoint commissioners and mark out their precincts, and thus get some semblance of organized communities, it would grant the people a delegate to look after Alaska's interests before Congress and the Departments. We look, therefore, to Congress to take this matter up at its approaching session and make a law which will allow the people to elect a delegate who shall represent them at Washington.

RECAPITULATION.

The three topics upon which legislation is most earnestly desired for Alaska are the land laws, the status of the natives, and a Delegate. If Congress can give its attention to these three things, and decide upon them, we shall be satisfied.

Very respectfully,

JOHN G. BRADY,
Governor of Alaska.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

APPENDIX A.

SAN FRANCISCO, *August 16, 1900.*

DEAR SIR: We have the pleasure to acknowledge receipt of yours of August 1 requesting statistics of the salmon pack of the fiscal year ending June 30, 1900, in the Territory of Alaska. In reply we beg to say, as you are well aware, it would be impossible for us to make an estimate from the middle of one season to the middle of another season, and the best that we can do for you is to give you the season of 1899 as a whole, as per sheet inclosed. We have not a statistical sheet of the packing of outside canneries, but we understand same to be additional—about 375,000 cases and 11,900 barrels.

We beg to state that we paid to the United States Government a duty on tin plate imported amounting to $43,215.

The registered tonnage of American ships employed by us was 26,100, the greater part of which are owned by our association. In addition to the sail tonnage we employ 34 steamers, all of which are our property, ranging up to 500 tons register.

We paid to natives for labor performed $40,109.

We purchased shooks for salmon boxes from Messrs. Willson & Sylvester, at Fort Wrangell, and Hamilton, Simpson & Co., at Port Gravima, at an expense of $13,500.

We paid permanent employees in Alaska about $85,000.

Which statistics we beg to advance to you owing to the criticisms that have been made regarding our taking fish from Alaska and leaving no equivalent.

Salmon hatchery on Karluk River has been continued with an output of over 8,000,000 fry the last season, from which we soon hope to reap some benefits.

Trusting that above may answer your requirements, and that if you find not you will promptly command us, we remain,

Truly yours,

ALASKA PACKERS' ASSOCIATION,
W. B. BRADFORD, *Secretary.*

Hon. JOHN G. BRADY,
Governor of Alaska, Sitka.

Statistics of Alaska salmon pack, season 1899.

Name.	Location.	Apparatus used.	Men employed.			Number of salmon taken.				Cases.	Barrels.	Steamers employed.	Boats and lighters.	Nets.	Sail tonnage employed.	Value of tin plates.
			White.	Native.	Chinese.	King.	Red.	Spring.	Pink.							
Bristol Bay Canning Co	Nushagak	Traps and gill nets	......	......	112	......	......	......	......	......	......	......	......	......	......	......
Alaska Packing Co	do	do	208	40	112	24,876	1,758,144	396	16,758	135,724	1,743	4	100	180	5,084	$65,000
Arctic Packing Co	do	do	......	......	112	......	......	......	......	......	......	......	......	......	......	......
Do	Naknek	do	94	30	102	184	725,122	......	......	43,790	3,129	1	40	44	1,159	21,000
Karluk Packing Co	Karluk	Seine	......	......	......	......	404,872	......	......	......	......	......	......	......	......	......
Hume Packing Co	do	do	230	25	390	1,104	225,758	24,520	......	91,548	......	7	130	10	4,631	44,000
Alaska Improvement Co	do	do	......	......	......	......	861,218	......	......	......	......	......	......	......	......	......
Uganuk Fishing Station	Uganuk	do	......	......	......	......	154,856	......	......	......	......	......	......	......	......	......
Arctic Packing Co	Alitak	do	42	15	60	......	368,283	2,024	......	28,294	75	1	25	6	926	13,500
Arctic Fishing Co	Kusiloff	Traps and gill nets	66	25	102	9,984	334,320	24,890	......	28,815	154	3	37	30	1,139	13,500
Chignik Bay Packing Co	Chignik	Traps, seine and gill nets.	93	......	102	......	335,610	8,904	......	34,674	......	2	43	15	1,272	16,500
Pacific Packing Co	Prince William Sound.	Gill nets and seine	106	......	65	3,152	301,932	......	125,622	31,931	......	3	37	34	1,072	15,500
Pyramid Harbor Packing Co.	Pyramid Harbor	Gill nets	106	275	86	12,540	484,950	3,934	......	58,237	......	2	59	50	1,263	25,000
Glacier Packing Co	Fort Wrangell	do	34	150	84	8,684	119,412	55,648	560,214	50,201	......	2	40	37	1,276	24,000
Alaska Salmon Packing and Fur Co.	Loring	Seine	66	200	130	......	227,520	28,648	776,862	63,390	693	2	11	7	1,530	30,500
Point Roberts Packing Co	Koggiung	Traps and gill nets	134	25	300	1,064	1,513,005	......	......	116,651	......	5	36	30	3,850	56,000
Ugashek Fishing Station	Selina River	Traps, seine, and gill nets.	78	30	102	......	661,542	......	......	44,984	1,535	3	55	21	1,826	21,500
Egegak Fishing Station	Egegak	Traps and gill nets	41	15	......	......	284,650	......	......	......	5,693	2	15	20	298	......
Total			1,298	830	1,859	61,588	8,261,194	148,964	1,479,456	723,239	13,022	37	628	484	24,821	346,000

PACIFIC STEAM WHALING COMPANY,
San Francisco, August 14, 1900.

DEAR MADAM: In response to your request of August 1 we submit the following figures as being the estimated amount of salmon packed by us for the fiscal year ending June 30, 1900: Chignic Bay, 21,003 cases; Hunters Bay, 37,505 cases; Uyak Bay, Kadiak Island, 14,905 cases; Kenai, Cooks Inlet, 20,948 cases; Orca, Prince William Sound, 31,213 cases; Nushagak, Bristol Bay, 10,000 cases; a total of 135,574 cases.

According to the reports we have received from our cannery superintendents we have packed this season as follows: Chignik Bay, 5,500 cases; Hunters Bay, 465 cases; Uyak Bay, 7,000 cases; Kenai, 2,700 cases; Orca, 21,708 cases.

The above added to the following figures: Chignik Bay, 15,503 cases; Hunters Bay, 37,040 cases; Uyak Bay, 7,905 cases; Kenai, 18,248 cases; Orca, 9,505 cases; Nushagak, 10,000 cases, which we packed after June 30, 1899, up to the end of the season, will make the total estimated pack, viz, 135,574 cases.

Yours, truly,

EDWIN L. GRIFFITH, *Manager.*

GERTRUDE P. KNAPP,
Private Secretary Governor Brady, Sitka, Alaska.

METLAKAHTLA, ALASKA,
September —, 1900.

DEAR SIR: In reply to the letter I received from your private secretary asking for statistics of the salmon pack at this place of the Metlakahtla Industrial Company during the fiscal year ending June 30, 1900, I beg to inform you that we shipped between the dates September 30, 1899, and January 24, 1900, in all, 12,322 cases of salmon, consisting of 6,372 red salmon, Mission brand; 4,952 cases pink salmon, Buckle brand, and 997 cases coohoos, or silver salmon.

Yours, very respectfully,

WILLIAM DUNCAN.

HON. JOHN G. BRADY,
Governor of Alaska.

APPENDIX B.

OFFICE OF THE COMMANDING OFFICER,
Fort St. Michael, August 7, 1900.

SIR: I have the honor to transmit herewith a true copy of a letter received at these headquarters from the sanitary officer of this port.

Very respectfully, your obedient servant,

D. L. HOWELL,
Captain, Seventh Infantry, Commanding Post.

The GOVERNOR OF ALASKA,
Fort St. Michael, Alaska.

FORT ST. MICHAEL, ALASKA, *August 6, 1900.*

SIR: In compliance with instructions of the 4th instant, relative to looking into the condition of Indians in the village of Stebben, I have the honor to submit the following:

I proceeded to this village with rations enough to last them eight or ten days. Upon my arrival I went to each cabin and tent and found these people to be suffering intensely from a disease which I should judge to be la grippe or pneumonia. Besides this illness, they have had no wholesome food to eat since they were taken down sick, some three or four weeks ago.

There are from 40 to 50 Indians in this village, and it is safe to say 90 per cent are in a helpless condition. In the past week 8 have died, and were carried by the Indians to the high ground about 100 yards from the village. I buried these, with one other I found in a cabin.

In my opinion these Indians will be unable to lay in their customary winter supply of seal, fish, etc., and I recommend they be looked after every ten or tweve days, and medical attendance be given until they are able to care for themselves.

Very respectfully,

Wm. O. Adams,
Second Lieutenant, Seventh Infantry, Sanitary Officer.

Commanding Officer,
Fort St. Michael, Alaska.

Office of the Post Commander,
Fort St. Michael, Alaska, August 6, 1900.

Sir: In compliance with your request, I have the honor to state that since the destitution and sickness became apparent among the natives on this island and on the mainland adjoining, the military authorities have done all in their power to help the living by furnishing food, medicine, and medical attendance and by burying their dead.

Thus far we have fed, for periods ranging from two or three up to ten days, about 50 natives and have buried about 30.

We are reaching the native villages hereabouts with help as rapidly as possible, and are sending word out of our willingness to help those in need.

Very respectfully, your obedient servant,

D. L. Howell,
Captain, Seventh Infantry, Commanding Post.

The Governor of Alaska,
St. Michael, Alaska.

St. Michael, Alaska, *August 1, 1900.*

Dear Sir: I came just a few days ago from a trip down the river between Holy Cross Mission, Koserefsky, and the south channel of the Yukon delta.

Everywhere on our way we found a great part of the population down with the influenza. I heard of several cases of death, but in our rapid transit we could not ascertain the number of deaths in the village around. One of the Brothers of the Catholic Mission of Holy Cross arrived yesterday on the steamer *Susie* and reported six deaths at Koserefsky, and among them that of the Sister Superior of the Catholic school. The others were Indians of the village.

I judge by this that the situation has been yet aggravated since my passing by, and that if no relief come in medicine, food, and proper clothing and bedding many will die through natural helplessness and impossibility of remedying their pitiful state. Even here around St. Michael, where the Indians could get better assistance, many died, and their bodies remained unburied until the military took things in hand and did all that they could for relief. Praise to the officers for their assistance! On the river, of course, by the steamers going up on the regular route, the Indians can also obtain some relief, and I hear with consolation that measures are being taken to assist them.

But I want to attract your special attention to the people out of the way of any steamer, who can get no help or attendance from anywhere.

I visited personally villages on the Kunlvak Channel, near the south mouth of the Yukon, and I had to distribute remedies in every house. Now, from my personal knowledge of several years visiting the coast between the Yukon delta and Kuskokwin, I can affirm that the farther one gets south of the Yukon toward the Kuskokwin the greater also is the destitution, the filth, and helplessness of the people. The country is desolate, entirely deprived of timber, flat, swampy and muddy. Only some few rare pieces of wood thrown by the sea from the Yukon on far distant shores are to be seen; therefore very little fuel for winter.

The run of salmon is much more limited than on the Yukon; therefore much suffering every winter.

Mr. Johnson, who was appointed last winter to take the census of that district—namely, between the mouth of the Yukon and the Kuskokwin—reported that of all the Indians he knew on the river and around he had not yet seen any so poor and destitute as these are. This census, which I judge very approximately correct, numbers 3,055 persons in that district.

If the sickness has taken hold of this poor people as it has done all over the country, which I judge to be more than probably the case, I estimate that the mortality among them will be frightful if nothing is done for their relief. I beg, therefore, assistance in their name, and I will also acquaint with the situation the prefect apostolic, our superior, very reverand Father J. B. Rene, S. J., who is expected here in a few days, so that some action may be taken in concert for the relief of the suffering people.

Respectfully, yours,

T. M. TRECA.

Mr. JOSEPH F. EVANS,
Special Agent of the Treasury Department.

ORTHODOX CHURCH OF RUSSIA IN AMERICA.
St. Michael, Alaska, August 3, 1900.

SIR: Having heard that you are endeavoring to ameliorate the present most deplorable condition of the native Indians in this section of Alaska, I humbly beseech you to hasten this work before it is too late, for the all-important reason that if speed be not used at this critical moment the death rate will increase to an alarming extent. I can assure you that within the limited confines of the district under my personal supervision there have been no less than 300 deaths since the commencement of the existing epidemic of measles and la grippe, and the conditions are growing worse daily.

Through lack of proper food and nourishment the natives are so weak as to be almost absolutely helpless, and they can not even do the work necessary to put their homes in proper condition for habitation during the coming winter, which will surely bring the scourge of pneumonia with it.

The epidemic of sickness commenced, most unfortunately, just at the season when they should have been engaged in fishing, in order to supply the wants of themselves and their dogs throughout the winter. While sick they could not go near the water, as that meant death, and when convalescing they could not pursue their avocation of fishing, as that would mean a relapse, followed inevitably by death. Hunting has been an impossibility with them, and the same may be said of trapping. Naturally they have been too weak to haul the driftwood to their homes, or even to chop it to provide the necessary fires for warmth and cooking.

As a consequence of the foregoing, distress exists everywhere, and death after death is fast decreasing the native population.

I pray to you to assist these good, kind, harmless people in every way that you can. They have never before asked for assistance; in fact they themselves do not now ask it, for it is the great common cause of Christianity that is observant of their dire necessities, and which I devoutly hope will bring to them the succor that is so needful.

These natives have at all times supported themselves, and upon hundreds of occasions they have fed and sheltered the whites without the slightest expectation of remuneration, but merely through pure kindness of heart. It is to be regretted that this same open-hearted hospitality has in too many cases been abused.

If the suggestions of one who has worked among these poor and deserving people would be of value to you, I would advise the establishing of at least four auxiliary distributing stations in this district, namely, at New Hamilton Station, on the Yukon River; at Andreaofsky; at Razboineckoe, about 45 miles above Andreaofsky; and at Pimute, which is about 45 miles above Russian Mission. To my mind it would be best to have the priests of the different religious denominations charged with the delivery of the supplies of food, clothing, and blankets, as they would distribute them through the medium of men who they know would deliver them to the most deserving people, and in proper quantities at different periods, so that there would be no waste. It would be a fatal error to deliver supplies for a long term of months at one time. To the natives it would seem like too much prosperity, and they would not be careful. I think that it would be advisable to have an officer and several soldiers patrol the district constantly, in order that the necessities of the natives from time to time be not overlooked.

If you could but see the miserable huts that these people occupy in winter, the conditions under which they have lived when in good health, and then picture them as they are now—weak, sick, starving, and poorly sheltered—you would, I am sure, hasten your Government in this errand of mercy. That your efforts may be successful is the prayer of—

Your obedient servant,

REV. J. KORCHINSKY.

HON. JOSEPH F. EVANS,
Special Agent, Treasury Department, St. Michael, Alaska.

APPENDIX C.

SITKA, ALASKA, *September 28, 1900.*

SIR: In reply to your request to furnish for your forthcoming annual report some information relating to the census of Alaska, I beg to report that the territory over which I have supervision extends from Dixons Entrance south to Unalaska west, including the Aleutian group and the Seal Islands; also all the interior country south of the Yukon and its tributaries. The Director of the Census empowered me to establish enumeration districts and to appoint, with his approval, such number of special agents as I deemed necessary to insure a prompt and accurate enumeration of the population and products of the territory assigned to me. From the ranks of teachers, lawyers, and newspaper editors I selected persons of good clerical ability, who entered upon their work with intelligent zeal, and I believe the work of enumeration has been thoroughly and well performed.

I have made no special effort to ascertain from the schedules the exact population, having been instructed to forward the returns to the Census Office at Washington, D. C., where the work of tabulating is done by specialists aided by machinery. Owing to the lack of facilities for traveling in Alaska, the Director of the Census early in the year applied to the Secretary of the Treasury, requesting aid and assistance through the Revenue-Cutter Service in Alaskan waters in taking the census of certain islands, and to aid the special agent of the census so far as possible, which met with a favorable response; and the assistance to be rendered was distributed by the Acting Secretary as follows:

The *Bear*, commanded by Capt. Francis Tuttle, to assist in taking the census of Little Diomede, Kings, and the St. Lawrence islands; the *Rush*, commanded by Lieut. W. H. Cushing, to take the census of the islands of the Aleutian group west from Unalaska, including Attu; the *Manning*, commanded by Capt. W. H. Roberts, to enumerate the inhabitants of Nunivak Island; while the *Perry*, commanded by Capt. W. F. Kilgore, to render assistance in southeastern Alaska and to convey a special agent to the Kuskokwim. The steamers *Bear* and *Perry* touched at Sitka the first week in June on their way west, and the latter kindly received on board two special census agents, Mr. H. H. Hildreth, who was landed in his census district, embracing the territory from Unga to Unalaska; while my special assistant, Mr. John Lyons, was conveyed to Bristol Bay, where he was transferred to the steam tug *Pearl*, which would leave July 3 for the Kuskokwim, and I have not heard from Mr. Lyons since that date. He was instructed to remain until the census work on the Kuskokwim and its tributaries was completed. I expect him to return soon overland via St. Michael.

The Treasury Department also kindly directed that its agents should take the census of the seal islands.

Under orders from the commander of the *Rush*, Dr. Henry Horne, surgeon of the revenue steamer, enumerated the people of the islands west of Unalaska, and has the honor of making the first report to the census office at Washington, D. C.

The number of inhabitants living upon Attu is 75—males 39, females 36, including 20 children under 10 years of age. The population of the island of Atka is 134—males 63, females 71, including 32 children under 10 years of age. On the island of Umnak the population is 109—males 51, females 58, including 35 children under 10 years of age.

Nearly all of the inhabitants of these islands are Aleuts. The almost universal occupation of the natives is fishing, hunting, and basket making. There are no returns of furs, fishing, mineral products, agriculture, or of schools. Three orthodox Greek Catholic churches, one on each island, are reported. There is no priest on any of these islands. The priest at Unalaska visits at irregular intervals. The entire population, including infants in arms (with two exceptions), is reported under the head of "communicants."

The census returns from the interior districts, with the exception of Cooks Inlet, have not been received. However, we expect all returns to be in by the middle of October.

We can closely approximate the population of a few districts. Between Dixons Entrance and Wrangell Narrows there are about 2,300 natives, one-third of which are Thlingits, one-third Tsimpsheans, and one-third Hydas, the latter confined almost entirely to Prince of Wales Island. In this same extent of country there are approximately 1,800 whites of different nationalities.

The largest villages in this subdivision are Fort Wrangell, Ketchikan, and Metlakahtla.

Mr. George M. Miller, special agent for the Juneau district, which embraces a large area, has written a very lucid report, which you have permission to use. I have some other reports from which you may wish to gather facts and figures.

I have the honor to be, your obedient servant,

William A. Kelly,
Special Census Agent.

The Governor of Alaska, *Sitka.*

Report of George M. Miller, Special Agent, No. 5, Southern District.

The subdivision included in this report embraces the mainland from Wrangell Narrows north to Seward City, a distance of 160 miles, and is bounded on the east by the Canadian boundary line and on the west by Lynn Canal and Stephens Passage. It is chiefly composed of precipitous mountains which terminate at the water's edge in abrupt bluffs, affording a very limited area of any possible value for agriculture or grazing. These mountain steeps are broken here and there by arms of the sea extending from the main channels inland from 5 to 25 miles, forming bays and inlets and affording excellent channels and harbors for deep-draft shipping. At the head of some of these inlets are found considerable areas of apparently good agricultural land, the proportion being estimated at about 1 per cent of the entire area. Summer showers are of sufficient frequency to prevent forest-clearing fires, so that clearings made for agriculture are accomplished with great expense and labor. The cost of clearing forest land ranges from $100 to $800 per acre, depending upon the density of the forest.

At the head of Berners Bay are bottom lands to the extent of several thousand acres, well covered with rank native grass and sparse growth of willow and spruce, and still vacant and unoccupied. At the foot of Mendenhall glacier, 8 miles north of Juneau, a tract of several thousand acres in extent is covered by a rank growth of native grass; one farmer and his family are located here and appear to be making a success of stock raising and agriculture.

On Endicott Arm, near Sum Dum, are large tracts, well grassed and attractive in appearance. One farmer has recently settled here and is now planting his first crop.

THE MINERAL BELT.

Extending parallel with the main water line and near it is a mineralized belt from 5 to 12 miles in width and reaching through this subdivision from Windham Bay to Seward City and beyond. This mineral belt carries gold, silver, lead, and graphite. Gold is found in both free and base conditions.

GOLD MINING.

By far the leading industry of this locality is gold mining. Within this subdivision are 12 quartz mills, 3 hydraulic placer mines, and numerous other mining enterprises in course of development. The Sum Dum Chief mill is situated 2½ miles from Endicott Arm and runs 10 stamps night and day the year round. This machinery is all driven by water power. About 4,000 feet of tunnels have been run on this property, exposing large bodies of ore. On Gold Creek near Juneau the Ebner Gold Mining Company operate a 15-stamp mill practically the entire year by water power. In the same creek the Humboldt Mining Company, of New Jersey, operate a 10-stamp mill; this mill was enlarged last year from 5 stamps and its working capacity doubled. It is driven by water power exclusively.

At Silver Bow Basin, on Gold Creek, the Alaska-Juneau Gold Mining Company operate a 30-stamp mill and one 5-stamp mill on the same property, which are driven exclusively by water power. Owing to the great altitude of these latter mills, the depth of snow and low temperature prevents their operation from November to April. In the same basin the American Gold Mining Company operate the Silver Bow Basin placer mine, running two 6-inch giants from April to November. This property embraces 200 acres of deep gravel wash opened in 1891 by running a tunnel, tapping this gravel bed at lowest point. In this tunnel a flume is laid through which the gravel passes, separating and saving the gold.

One mile above the Silver Bow Basin the Lervey Basin placer claim was opened in 1899 and employs one giant. This claim was opened by running a tunnel 483 feet and tapping the gravel bar at the lowest point and washing through this tunnel, as is done in the Silver Bow Basin.

At Sheep Creek, 4 miles south of Juneau, the American Gold Mining Company operate a 20-stamp quartz mill. This mill is run by electric power generated by waterfalls and crushes rock the year round. The ore is mined at an elevation of about 2,000 feet and by aerial cable trams conveyed to bunkers at the foot of the bluff; from here it is conveyed by steam cars on steel track three-fourths mile to the mill. At Seward City, 40 miles north of Juneau, three mills have been erected by as many different companies. The Berners Bay Mining and Milling Company have a 40-stamp mill, operated during the warm season by water power and during cold weather by steam. This company have constructed a narrow-gauge steel railroad from their wharf on Lynn Canal to their mill, a distance of 3 miles. This railroad track has five switchbacks and overcomes a grade of 800 feet at the mill. The ore is mined at an elevation of about 1,900 feet, and is conveyed from the mines to the mill by means of steel aerial cable trams operated by gravity, the weight of the loaded buckets drawing up the empty ones. From the mill compressed air is conveyed in iron pipes to the mine, where it is used for driving machine drills and for ventilation.

One mile north from this mill the Mellen Mining and Manufacturing Company have erected a 20-stamp mill which is now being put into operation for the first time. The same railroad that reaches the last-named mill also supplies this one. This mill is situated about 2 miles from tide water at an elevation of 600 feet. The ore is mined at a point 900 feet above the mill and 1 mile distant. From the mine the ore is conveyed to the bunkers at the foot of the bluff by means of aerial steel trams operated by gravity; from these bunkers it is conveyed to the mill by means of a three-rail steel rail tram, resting upon an elevated roadbed and operated also by gravity. This tram is the only one of its kind in use here, and is interesting on account of its novel and simple construction. The track has three rails with a stationary switch at the central point where the loaded cars pass the empty ones. It is a grade of about 9 feet to the hundred and the cars are drawn up and lowered by means of a wire cable passing over a drum at the upper end of the track. This mill has steam power for use in winter and water power during warm weather.

On the shore of Lynn Canal the Portland Alaska Gold Mining Company have built a 10-stamp mill. The ore is conveyed from the mine to the mill, 2½ miles, by means of aerial steel wire trams operated by gravity. This mill was completed in 1897 and operated for one month, since which time it has remained idle. The cause of its idleness is believed to be disagreement among its owners as to the management. This mill is operated by water power.

Near Berners Bay, and 6 miles from tide water, the Alaska Gold Mining Company of Indiana have just completed a 10-stamp mill, which will soon be in operation. It is provided with water power that is effective ten months of the year.

One-half mile south of this mill is located the Jualin mine and mill of 10 stamps, operated by the Jualin Mining Company of Indiana. The mill is operated by water power, which is effective ten months of the year.

At Yankee Basin, 33 miles north of Juneau, a 5-stamp mill has been built by the Aurora Borealis Mining Company. The mine is in process of development, and this mill is operated for only a short time each season.

On Snettisham Arm, 35 miles south of Juneau, the Snettisham Gold Mining Company is constructing a 30-stamp mill on extensive ledges of low-grade ore. The mill is in the first stages of construction and will not be in operation for some months. This mill will be driven by water power.

On Windam Bay, 75 miles south of Juneau, the Windam Bay Gold Mining Company are erecting a 10-stamp mill to be run by water. In these mines the gold is found in both free and base conditions. The concentrations and sluices from these mills are shipped to Tacoma and Everett, Wash., for treatment at the smelters.

DEVELOPMENT WORK.

At various and numerous points along the entire length of this mineral belt parties are prosecuting development and prospect work by running tunnels, drifts, and shafts, opening new ledges and deposits. This work, however, has been largely checked the present season by the superior attractions at Cape Nome taking from this part of the country a large part of the prospectors.

THE FISH INDUSTRY.

Next in importance to that of mining is the fish industry. At Wrangel Straits (Petersberg) the Icy Straits Packing Company have this season erected a cannery and packing house with a capacity of

100,000 cases of salmon. This company operated a packing house for fresh halibut at this place during last winter. It also packed in salt 2,000 barrels of herring of 200 pounds each. Halibut are packed on glacial ice in boxes containing about 700 pounds each and shipped to Seattle, thence to retail markets. Of this fish 3,500 tons is estimated as the shipment for the season closing March 1. The halibut fishermen with their boats arrive from the south in the fall and return there in the spring. The salmon canning season continues from May 20 to September 1, then follows the herring season, and after that the halibut. At Sum Dum about 50 tons of this latter fish were thus packed during the past season, and at Juneau about the same quantity. On Snettisham Arm and on Taku Inlet new salmon canneries are just completed and are now being operated for their first season. The king salmon taken in the Taku are considered equal in both size and quality to the royal Chinook of the Columbia River. Large numbers of these Taku salmon are especially treated and shipped whole to the royal kitchen of Norway for the benefit of King Oscar.

TIMBER.

The timber resources of this part of Alaska are limited to narrow margins along the streams and tide channels and to the altitudes under 800 feet. Its timber growth is disappointing to those who view it only from the decks of passing steamers. As a rule the larger trees grow only near the shores, where the natural drainage is more perfect, while the benches and level lands are almost invariably barren of good timber or covered with a scrubby growth too small for milling purposes. Such trees as are suitable for saw logs are few and far between, rendering their use tedious and expensive. There is, however, a fair supply of timber such as spruce, hemlock, pine, and yellow cedar of suitable size for firewood, mine timbers, and piling for docks. There are only two sawmills in this subdivision that make lumber for market. These are both small concerns and idle a larger portion of the time, thus indicating a lack of success, caused chiefly by their great difficulty in securing a sufficient supply of logs. The larger part of the lumber consumed is shipped from points farther south, including Seattle and Tacoma.

WAGES.

Miners receive $2.50 per day of ten hours and board, foremen, $5 per day and board; laborers, $2 and board. The food supplied at the mines is of good quality and sufficient supply, fresh beef and canned or dried fruit being found on each table. Bunk houses are supplied by the mine owners, provided in some instances with spring mattresses, but the workmen must furnish their own blankets. Men working about the mines are charged $1 per month as hospital dues, which entitles them when sick or disabled to full hospital treatment, including nurse and physician. The hospital is located in Juneau, which is the commercial center of this subdivision.

CLIMATE.

Snow falls during the winter months, and along tide water attains a depth of 18 inches to 3 feet, and at an elevation of 800 feet 5 to 10 feet. The cold rarely reaches the zero point along the shores of tide water, but grows rapidly colder as the distance inland or elevation increases. During the spring and fall months there are heavy rainfalls, while the light showers occur throughout the summer. Wind storms from the north sometimes occur during November strong enough to wholly retard navigation for several days together.

HIGHWAYS.

The highways of this section are the water courses. The longest wagon road found is that leading from Juneau to Silver Bow Basin, 5 miles. The salt-water channels are of sufficient depth for the largest steamers.

TRANSPORTATION.

The chief means of transportation is by steamers, which ply up and down the Lynn Canal and Stephens Passage and their various arms. Small steamers ply weekly from Juneau to the various settlements and mines, with an average passenger tariff of 8 cents per mile.

REPORT OF H. H. HILDRETH, SPECIAL CENSUS AGENT, COOK INLET DISTRICT.

The taking of the census in western Alaska was by no means an easy task. In many instances it was only completed after encountering various dangers, hardships, and obstacles. Probably in no other portion of our country was the work so difficult, the time consumed so long, or the cost in proportion so great as in this district.

Here the enumerator did not have the advantage of traveling over his district with a horse and buggy, nor could he go awheel. During the progress of his work he must use snowshoes, a sailboat, and a dog team. He must ride in a bidarka, a dugout, a birch-bark canoe, and, if necessary, cross a stream or other body of water on a log or an ice floe. He must also be able to swim, to cross a glacier, scale a snow-capped mountain, or wend his way through a deep canyon and not lose his presence of mind. Three things he must possess as essentials to the completion of his work successfully, and those are patience, perseverance, and determination. It would be difficult to describe the obstacles and harassments one meets with in enumerating the inhabitants and securing the necessary data of the country that a census agent was expected to obtain in his work in Alaska. Our very efficient chief, William A. Kelly, esq., of Sitka, special agent for the southern district of Alaska, realizing all these difficulties, allowed us ample time and the necessary aid to complete the task. This was accomplished under great hardship and attended with many dangers and much exposure to the elements.

I secured in the outset a good interpreter and dog team, and after the snow had disappeared we traveled in boats. For nearly five weeks we journeyed over the mountains from one mining camp to another and from village to village. At night we camped on the snow with only the heavens for a canopy and with a thick layer of spruce boughs ("Alaska feathers") under us for a bed. Although the mercury dropped to from 20° to 40° below zero for the first three weeks of our trip, we kept warm and comfortable in our sleeping bags. Thus we voyaged throughout the Kenai and Sushitna River country, crossing mountains and glaciers and going through deep gulches and canyons that could not be passed in the summer months. One night we would camp alone on the snow or ice, the next perhaps with a prospector or trapper. On one occasion we stopped with a native family, but I soon decided never to do so again, but rather to sleep out in the snow with the thermometer at 50° below zero. The large number of "fraternal delegates" that we met in that house was surprising, and they took such a liking to us that it was a week before we were able to "shake" them.

We crossed the Turnagain Arm in March when it was filled with great icebergs. This was a dangerous trip, but we made it with safety after a few thrilling experiences. Through the Sushitna River country we traveled with dog teams and made very good time. After the snow was gone we were compelled to use boats. Several times we had to cross the inlet in rowboats—a dangerous proceeding—but after encountering many storms, head winds, and calms we at last completed our labor. It is safe to say that this was performed in half the time and at half the cost than had it been done in the summer months.

In this work I was engaged three months after reaching my territory, and during that time we traveled 3,653 miles, on 307 of which I went afoot.

The district to which the writer was assigned as special agent is known as the Cook Inlet district. This embodied the Kenai Peninsula, the Sushitna and Knik rivers and their tributaries, and the western coast of the inlet. The section embraced an area of 150 miles in width by 300 miles in length. It is situated in southern Alaska, about 750 miles west of Sitka, or midway between that city and Unalaska. It is a most beautiful country of mountains and valleys, rivers, lakes, and bays, glaciers, and volcanoes; a country rich in gold and copper, coal and petroleum, wood and grass, game and fish. Portions of it have a climate unsurpassed, either in Alaska or in a few of our Northern States. In order to obtain a proper idea of the resources, the climate and the topography, as they are so diversified, it will be necessary to describe it in its natural subdivisions.

COOK INLET.

Topography.—This name is familiar to all those who are acquainted with Alaska. The first rush of gold seekers was to the Cook Inlet country. Some few found the treasures they were seeking; many left the country broken in health and pocket, and discouraged; and scores lost their lives in the restless waters of this arm of the sea.

Cook Inlet is a body of water nearly 200 miles long, and its greatest breadth, from Port Graham to the western coast, is 60 miles. It is very dangerous, especially in the northern part. Storms, sudden squalls, and tide rips all come in one day and with little or no warning. The tide runs from 8 to 15 miles an hour, and no boat dares to stem it. The view from the deck of a steamer in these waters is grand. Green hills, snow-capped mountains, glaciers, and, towering above all, volcanoes—mountains belching forth fire and smoke.

At the upper end of the inlet are two branches or arms known as Turnagain and Knik arms. Turnagain Arm is the most noted, and is the most dangerous body of water in southern Alaska. Here is said to be the second highest tide in the Territory, the difference between high and low water mark being 42 feet. When the tide starts to flood, the waters come rolling and rushing in, forming a great tidal wave, or bore, as it is called, from 2 to 10 feet high, sweeping everything before it. It runs at the rate of about 15 miles an hour, and its roar can be heard for a long distance, inspiring one with awe. Not many vessels have been able to withstand this great upheaval of the sea, and many a poor boatman or prospector has here found a watery grave. No less than thirty lives have been lost in it since the rush to this country.

Volcanoes.—On the southwestern coast of the inlet are three volcanoes. Two of these are located on the mainland and one on an island. Of the former Mount Iliama is the highest, being 12,066 feet high. Smoke is issuing from it probably half the time, and it presents a grand appearance. Mount Redoubt, 11,270 feet, is active at distant intervals only. That on Augustine Island is inactive.

KENAI PENINSULA.

This great and fertile body of land is about 80 miles wide and 150 miles long. It is bounded on the east by Prince William Sound and on the west by Cook Inlet. In the winter, with its lofty mountains of snow and ice, its rugged peaks and rock-bound coast, it presents a picture at once grand and awe inspiring; in the summer, with these same mountains snow-capped alone, and forests, the picture is one of gorgeous color.

Physical characteristics.—The surface of the peninsula is mostly mountainous, interspersed with lakes and rivers and streams. There are large areas of farming land capable of cultivation. Nearly the entire country is covered with a fine growth of timber, and traveling in the summer is quite difficult where there are no trails.

Climate.—The Japan current passes along the southern shore of the peninsula, thus giving it a splendid climate. Inland the winters are quite cold, but along the seacoast they seldom become extreme. The summers are bright and warm, and but little sickness is known among the white population.

Flora.—The soil being rich and the rains frequent, there is a surprising abundance of vegetation. The hills and lowlands are luxuriant in red-top and bunch grass from 2 to 5 feet in height, on which domestic cattle and wild game thrive, while no imported hay will allure them from that made from native grass. Not less than 50 varieties of wild flowers and blossoms are found here—the hills, mountains, and valleys being radiant with their beauty and the air full of their fragrance. Wild berries abound and are of delicious flavor. In addition to the several kinds of purely indigenous fruit may be mentioned the cranberry, huckleberry, strawberry, raspberry, currant, and salmon berry.

Fish and game.—The lakes and mountain streams teem with several varieties of trout, while the islets and bays contain an inexhaustible quantity of salt-water fish, such as salmon, halibut, cod, herring, candle-fish (oolikan), mussels, clams, crabs, seals, and bologa.

Ducks, geese, ptarmigan, and grouse are abundant, while wild mountain sheep, moose, and bear are plentiful and afford an excellent food supply.

Fur-bearing animals.—Fur-bearing animals, such as marten, mink, red and black fox, wolf, and land otter are found here, but are not so numerous as they were a few years ago owing to their being killed off rapidly by the hunters. Black and brown bear are met with in all parts of the peninsula.

MINERALS.

Gold.—The first "rush" of gold seekers to the territory was to this portion of Alaska. In 1895 gold was discovered on Resurrection Creek, on the Cook Inlet side of the peninsula, and several thousand people flocked into the country seeking the precious metal. Some good mines were discovered and a large amount of gold has been taken out. When the Klondike excitement commenced, this section was almost deserted for the richer diggings. However, a few hundred miners remained and are now reaping the fruits of their patience, there being several very good placer mines on Six-mile and Resurrection creeks and their tributaries. This has not proved to be a "pick and shovel" country as yet, and it has been pretty well determined that the mining must be done with hydraulic outfits or steam shovels in order to be made to pay. Colors are found all over the peninsula, but not always in paying quantities.

With hydraulic machinery or machines for saving the fine gold, this section would certainly be a splendid mining country. If the hills and mountains of some of our States contained as much of the yellow metal as those of this part of Alaska, they would certainly be called rich.

Coal.—Along the southwestern coast of the peninsula, at Kachemak Bay, are found large quantities of coal. This has been in use for several years, being first discovered by the Russians. Nothing but the surface mineral has been used, and it has not always given satisfaction. Considerable area of this coal land has lately been secured by an Eastern syndicate, and they are driving large tunnels, and the material secured at a depth of a few hundred feet is proving to be of a very good quality. This company is known as the Cook Inlet Coal Fields Company. They have spent a large amount of money in developing these mines, giving employment to quite a number of whites and natives, 120 men now being at work in them. Buildings have been erected and machinery put in; a railroad is being constructed from the mines to tide water, a distance of 6 miles, where a big wharf and coal bunkers are already completed. There is said to be 156 feet of this coal in veins from 2 to 7 feet in thickness, and it can be seen along the beach for 20 miles, and probably runs back for 15 miles or more.

Fishing industry.—There are two large salmon canneries on this peninsula—one at Kenai and the other at Kussiloff, on the peninsula side. These canneries employ nearly 200 men each, who are brought from San Francisco every year. Last year they put up about 58,000 cases of salmon, valued at nearly $300,000. The white residents living near these canneries can obtain all the work they want during the season. Few natives are employed, as they can not be relied upon, hence the importation of labor. One-half or more of these employees are Chinamen. Natives who want work and can be depended upon to remain during the season always find employment and make fairly good wages.

Towns and villages.—The principal town on the peninsula is Sunrise, situated on Turnagain Arm. This is an enterprising little mining village of about 300 people. There are three stores that would be a credit to any town, a small hotel, town hall, and about 150 residences of various sizes. This place was founded in 1896, since which time thousands of people from all parts of the country have visited it in their search for gold.

Kenai is the next place of importance. It is situated some 40 miles south of Sunrise, at the mouth of the Kenai River. This is the oldest settlement on the inlet, having existed for more than one hundred years. It was first founded by the Russians in 1795. They built a fort, the Redoubt St. Nicholas, and it was for many years an important Russian military post. It is now inhabited by about 100 whites and Russian creoles and 250 natives. At this place is located one of the salmon canneries mentioned above. The Government has an agricultural experiment station here, employing a few men only.

Saldovia, situated on Herring Bay, is a large native settlement of about 200 people who live by fishing and hunting. There are two stores or trading posts at this place.

Homer, on the north shore of the entrance to Kachemak Bay, is a new town and growing rapidly. It has a post, and it is here that the coal miners referred to above are located. A large store, office, and a few residences and other buildings and a custom-house present a substantial appearance.

Munina, a picturesque village situated on the west coast of the peninsula, is a small settlement of about 100 Russian creoles. They live, as do the natives, by fishing and hunting. They have nice gardens and raise some cattle. These people are timid, superstitious, and un-American. The inhabitants heard that the writer was coming to their village to draft men for the Army, so when he arrived the whole male population had hied themselves away, and it was with some difficulty that the female members of the different families could be induced to divulge the information required by the Government. After showing his badge and threatening to arrest them if they did not answer his questions, he finally succeeded in completing the work there.

Hope, a small mining town, is situated on Turnagain Arm, 6 miles south of Sunrise. Here are located several mines that are paying good dividends. There are 2 stores and about 25 cabins.

Port Graham, or English Bay, as it is sometimes called from the bay on which it is situated, is a settlement of about 150 Aleuts and Russian creoles. Here are the only Aleuts on the peninsula, and the first of this tribe encountered in going west from Sitka.

At Kussiloff, situated on the river of the same name, are canning establishments. The inhabitants are the employees, mostly white and Chinese. The tide recedes at this place for a distance of about 4 miles, leaving only mud flats as far as the eye can see.

Natives.—The natives living in this section of Alaska are about as worthless a class of people as can be found anywhere. They are lazy and indolent, improvident and superstitious, dirty and sickly. It is strange, yet nevertheless true, that although they have had priests among them for more than a century the simple law that "cleanliness is next to godliness" has never been taught them. Their houses are small, miserable abodes of filth and foul odors. Six to ten people live in a room 10 by 12 feet in size, sleeping and eating in the one apartment. They know nothing of providing for a "rainy day" and live from day to day on a diet of fish and tea. While their country abounds in wood, coal, and game, and work is obtainable a portion of the time, they seldom trouble themselves about either. With little labor they could have excellent gardens, but these are rarely seen, as it would be too much exertion to till the soil.

These people are inebriates in more than a slight degree. What little money they obtain nearly all goes for liquor or the ingredients with which to make it. Almost every family makes "sour dough" (an intoxicating beverage made from graham flour and brown sugar), and an entire family drunk and all "laid out" is by no means an unusual sight. It is said, and, I believe, truthfully, that should one of these natives find a barrel of whisky, he would sit down by it, and, if no one interfered, he would never quit his job until the whisky was gone or he was dead.

It is strange that, with the hundred years of "religious training" which these people have had, they are in such a mean condition to-day. They are very susceptible to sickness, and their systems, generally being in a weak condition, easily succumb to any disease that breaks out among them. They die young, their average age being about 30 years.

These natives have no legends or talisman with which to represent their religion. They are ignorant and know of no earthly ruler excepting, or superior power to, the Czar. No people need the pure and simple religion of Jesus Christ more than do these.

Agriculture and grazing lands.—Throughout this district there is a large area of grazing land, covered with an abundance of rich grass.

Vegetables of all the hardy kinds are grown with great success in nearly every settlement. Potatoes, turnips, cabbage, lettuce, pease, celery, cauliflower, beets, radishes, and many other varieties of vegetables grow profusely and have a fine flavor.

As a farming and cattle country the Kenai Peninsula and Cook Inlet portion is a decided success, and the day is not far distant when along their shores will be seen many farms and cattle ranches.

TYOONOK COUNTRY.

The northwest coast of Cook Inlet from the West Foreland to the Sushitna River is known as the Tyoonok country. There are three settlements in this district—Tyoonok, Old Tyoonok, and Ladds Station. The population consists of some 300 natives and a few white men. At Tyoonok and Ladds Station are stores, and a very good business is transacted with the natives in furs.

The chief occupation of these people is fishing and trapping. They make a few curios, but are generally trifling and simple in their habits, as are their neighbors on the other side of the inlet.

Caribou and moose are found here, while geese, ducks, grouse, and rabbits are plentiful. Salmon is about the only kind of fish that is obtainable here, as the water is too muddy, owing to the swift current, for other species. The natives make their living from the sale of the skins of the several varieties of fur-bearing animals existing in this locality.

There is no mining in the immediate vicinity of Tyoonok. One or two large plants were erected near Ladds Station, but the companies proved to be composed of men of doubtful repute, and the proposition turned out to be a fizzle.

At Old Tyoonok we again find large deposits of coal. It is excellent for domestic use, but, being purely lignite, is not desirable for raising steam or for manufacturing purposes, although a few steamers utilize it.

From Old Tyoonok to the Bologa River, a distance of about 25 miles, there is a vast extent of level and rolling land that could be cultivated with great success. There are several thousand acres of this, and, the soil being rich and deep, the land could be easily and cheaply cleared. Several white men have raised vegetables for market and have done remarkably well, receiving good compensation for their labor.

PETROLEUM.

On the southwestern coast of the inlet near Cape Douglas is Coal Oil Bay. At this place petroleum has been discovered, and a company has located several thousand acres of land there and are now boring for oil. They have erected a few buildings and carried in a large amount of machinery. Quite a force of men is employed, and a good deal of money has been spent thus far in developing this property. They expect to get a fine quality of oil and an abundance of it. If they succeed, it will add another industry to the already large number now in "Seward's ice purchase."

THE KNIK RIVER DISTRICT.

At the head of Knik Arm, at the mouth of the river of the same name, is the village of Knik, consisting of two trading posts, a few good houses occupied by prospectors and traders, and a dozen or more native cabins. Considerable business is done here with the natives who come from the interior to sell and barter. About 200 natives live on the banks of this river, having temporary villages where they dwell at certain seasons of the year, hunting, fishing, and trapping.

These natives on the Knik River are far superior to those on Cook Inlet. They are known as Knik and speak a different dialect from their neighbors on the south. They are in reality a migratory race of people, moving from place to place as the season changes, in order to hunt, trap, or fish. They are energetic and desirous of information, the men and boys being quite anxious to learn the American ways and modes of living and to read English. They make snowshoes, blankets from furs, tan hides nicely, and make birch-bark baskets and other curios, showing much ingenuity and no little artistic taste in their work.

This country abounds in fur-bearing animals and in moose, mountain sheep, mountain goats, bear, and fowl.

Some prospecting has been done in this vicinity, and there is a number of men in the country at the present time who are of the opinion that they will find some good mines, but as yet nothing of value has been unearthed.

THE SUSHITNA RIVER DISTRICT.

The Sushitna River is more than 200 miles long, and it is navigable for half its length. It empties into Cook Inlet, draining a large area of country. Last year the steamer *Duchesney* (now running on the Yukon as a river transport and renamed the *Jef. C. Davis*) made several trips up the Sushitna with Captain Glen and party, who were surveying a route to the Yukon, which route has since been abandoned. About 300 natives live on the river and its branches, who are known as the Sushitna tribe. Their dialect is similar to the Knik and Tyoonok Indians, but they are a distinct tribe in themselves, honest and peaceable people, and, like their neighbors, the Kniks, they are industrious and far superior in every way to the Cook Inlet natives.

There are several settlements on the Sushitna River and its branches. The first reached in traveling up the river is Alexander. This is one of the cleanest and neatest native villages in Alaska. It is about 15 miles from the mouth of the river and has a population of 75 natives. When I reached the village I found it deserted, the people having gone out on a hunting and trapping expedition. I visited each of the houses and found them clean, of fair size, well constructed, and without the unsavory odor generally prevalent in the native domiciles. From appearances I thought that white people lived there and would have continued to believe so had not my guide assured me that it was a native settlement. Here were several acres well fenced, where the people have nice gardens in the summer. The next village is Sushitna, consisting of two trading posts, about 30 cabins, and a population of 200. These people live by hunting and trapping. They get black, blue, silver-gray, and red fox, marten, mink, bear, land otter, sheep, moose, and caribou.

Farther up the river are several temporary villages, but nearly all the natives have their headquarters or permanent homes within 50 miles of the mouth.

There are a few prospectors on this river, but no strikes of any importance have as yet been made.

Copper.—There are large quantities of copper in this district, and the natives are known to get it in huge chunks and make it into bullets. Owing to the fact that the country has not been prospected to any extent, the "mother lode" has not been so far discovered, but a few miners have brought out some fine specimens of gold and copper.

APPENDIX D.

OFFICE OF MEDICAL OFFICER IN COMMAND,
MARINE-HOSPITAL SERVICE,
Dutch Harbor, Alaska, August 22, 1900.

SIR: Referring to our conversation of a few days ago, when you requested a written account of the transactions of the marine hospital here, I have the honor to submit the following statement:

It has been evident to your honor and to others familiar with the condition of maritime affairs in Alaska since the gold discoveries at Nome that some provision should be made for extending the benefits of the Marine-Hospital Service to northern mariners. It was equally clear that as a site for a marine hospital Dutch Harbor presented certain advantages over other Alaskan ports. With these facts in view, the Surgeon-General of the Marine-Hospital Service early in the present year concluded an arrangement with the North American Commercial Company whereby the latter company agreed to furnish a suitable building for the purpose indicated at an annual rental.

The medical officer detailed by the Surgeon-General to take charge of this hospital arrived at Dutch Harbor July 16, 1900, and after delay, due to tardiness in arrival of supplies, the hospital was opened for the reception of patients on August 17. Patients were actually admitted to the hospital on August 20. During the latter part of the month of July treatment was furnished twenty-six times to out-patient beneficiaries at an office established for that purpose shortly after the arrival of the representative of the Marine-Hospital Service.

The hospital, as at present arranged, is a one-story frame building (see photograph) containing two wards (one medical, one surgical), an operating room, an office, a dispensary, quarters for steward and attendants, kitchen, and two modern bathrooms, and having a maximum capacity of twenty beds. The building is perhaps as satisfactory as could be expected under the circumstances now existing in the North, and its equipment is modern.

The personnel of the hospital force as at present constituted consists of two commissioned officers of the United States Marine-Hospital Service, one hospital steward, and three attendants, the latter item being subject to increase as circumstances demand.

Recently and with special reference to the existence of smallpox at Nome, a national quarantine station has been established at this port. The medical officers stationed here have been detailed to act as quarantine officers in addition to their other duties.

Respectfully,

DUNLOP MOORE,
Assistant Surgeon, M. H. S., in Command of Station.

Hon. JOHN G. BRADY,
Governor of Alaska.

JUNEAU, ALASKA, *August 31, 1900.*

SIR: The report of the transactions of the Marine-Hospital Service at this port for the six months ending August 31, 1900, are as follows:

The patients are cared for in St. Ann's Hospital under a per diem contract, and patients who require hospital treatment for a period exceeding twenty days and whose condition, in the opinion of the acting assistant surgeon, will permit their transportation with perfect safety will be sent to the marine hospital at Port Townsend, Wash.

Total number hospital cases	22
Total number days hospital relief was furnished	143
Total number sent to Port Townsend	3
Total number cases treated at surgeon's office	51
Total number times relief was furnished	255
Total number Revenue Service men treated	2
Total number deaths	1

The sanitary condition of the station has been excellent up to the last month, when several cases of enteric fever have been reported.

Respectfully,

SAML. C. LEONHARDT,
Acting Assistant Surgeon, M. H. S.

Hon. JOHN G. BRADY,
Governor of Alaska.

APPENDIX E.

GENERAL ORDERS, No. 8, JANUARY 19, HEADQUARTERS OF THE ARMY.

[Copied from Army and Navy Register of January 27, 1900.]

The following order has been received from the War Department:

WAR DEPARTMENT, *Washington, January 19, 1900.*

All that portion of the Department of the Columbia, embracing the Territorial limits of Alaska, is created a military department, to be known as the Department of Alaska. Col. George M. Randall, Eighth Infantry, is assigned to the command of the department, with headquarters at Fort St. Michael.

Pending the opening of navigation, Colonel Randall, with such officers as may be detailed to report to him for duty in the Department of Alaska, will take station at Seattle, Wash.

All explorations and surveys within the limits of the Department of Alaska will hereafter be under the special charge and direction of the commanding officer thereof, in connection with engineering work pertaining to that department.

All officers now engaged upon exploring or surveying duty, or who may hereafter be ordered upon such duty, within said limits, will report to the department commander, and they will submit to him all reports, maps, and correspondence relating to their operations.

The department commander will forward all such reports, maps, etc., to the Adjutant-General of the Army, with his remarks and recommendations thereon, for the action of the War Department, in order that the continuing work pertaining to such explorations and surveys may be done with reference to and in conformity with that previously done and of record in this office.

ELIHU ROOT,
Secretary of War.

APPENDIX F.

To the honorable John G. Brady, governor of the District of Alaska, and ex officio commander in chief of the militia of said District, greeting:

We, the undersigned male citizens of the United States, and residents of the District of Alaska, between the ages of 18 and 45 years, residing at Nome, in said District, do hereby most respectfully offer our services to the Government of the United States through you as commander in chief of the militia of this District as volunteers to assist the Government in protecting the lives and property of American citizens in the Chinese Empire, and for prompt reparation for the recent outrageous slaughter of American men, women, and children recently perpetrated by frenzied mobs of Chinamen in the city of Pekin, China.

Volney T. Hoggart, Jno. B. Wright, W. H. Hanna, Thomas Carroll, A. J. Green, R. B. Milroy, F. McNulty, John F. Kearney, J. H. Close, W. C. Kurz, Frank Keefe, Harry G. Carpenter, John Cunningham, B. L. Faust, Geo. Roach, Harold French, Denver Ed. Smith, Zur G. Peck, Frank Johnston, Joe. Hollenbeck, J. E. Tutu, W. H. Simpson, John Edwards, Mike Fagen, Martin Verner, Wm. Kipling, Thomas Stephens, Robert Johnson, Alex. Smith, Warner E. Janson, Fabien Charles, John Cunningham, John McCarty, Thomas Shulds, E. J. Martin, R. Simpson, T. M. Kinnoid, H. Bertrand, Wm. Meridith, Jos. Schuster, James Garrick, Jack St. John, Harry Harman, S. J. Corbett, J. Conlon, Chas. Austen, H. T. Hutchins, T. E. Hart, J. F. Gensel, Frank H. Cummings, Joe. Hollenbeck, Jas. W. Fapp, H. M. Goodwin, Frederick Smith, George Hickingbottom, Earl Gerald, D. A. Santa, Otto Gesselmann, Paul Harregan, Isaac Smith, A. Meyer, P. J. Pierson, Frank Cassidy, Frank Landstren, Andro. Madsan, W. B. Jones, L. Gold, L. Post, John A. Freeman, A. Anderson, Al. Larrud, W. Barrett, W. F. Snelson, H. R. Trenhem, John Houston, H. G. Kaisey, Chas. Stanton, Amzy Dutot, A. G. Hedges, B. B. Nygeen, James Duke, G. Hamilton. J. Kavanaugh, G. Schink, Chas. Lemdy, Thomas Moyles, C. L. Lowe, R. Turnbull, H. Sayer, D. M. Fell, T. J. Cross, Joseph Wallace, J. L. Stansfield, R. Clark, Wm. Splawn, T. Deneen, H. W. Hartsell, J. Sinclair, J. May, J. R. Farley, John Coggeshall, Jack R. Bell, Fred Card.

APPENDIX G.

OFFICE OF UNITED STATES SURVEYOR-GENERAL
FOR THE DISTRICT OF ALASKA,
Sitka, June 16, 1900.

The following is an estimate of funds to be appropriated for surveying service in the District of Alaska for the fiscal year ending June 30, 1902:

Estimate for surveying public lands.

Base lines, 48 miles, $25 per mile	$1,200
Meridian lines, 144 miles, $25 per mile	3,600
Standard parallel lines, 96 miles, $25 per mile	2,400
Township lines, 864 miles, $25 per mile	19,872
Subdivision lines, 3,840 miles, $25 per mile	76,800
Total	103,872

In support of the foregoing estimate, I beg to refer to the statements made in support of my estimate for surveying the public lands in this District, made for the fiscal year ending June 30, 1901, submitted under date of June 12, 1899, which are as follows:

"At first glance the foregoing estimate for surveys may appear unduly large, but when it is considered that this District embraces an area of unsurveyed land almost, if not altogether, equal to that of all other surveying districts combined, it will be noticed that it is very conservative.

"Frequent inquiries are made of this office from various parts of Alaska, relative to the extension of public surveys. These inquiries are generally made by settlers on the public lands who desire to acquire title to their homes.

"Owing to the discovery of rich mineral deposits in almost every part of the District, this country is rapidly developing along all lines. With each succeeding year settlers will, no doubt, become more clamerous for the extension of the lines of public surveys to include their claims, and the Government should heed their request to the limit of its ability. Those who endure the hardships and privations incident upon clearing their claims and building homes in this remote and isolated region deserve generous consideration.

"The estimates are all made at the maximum rates now allowed by law, and it is problematic whether contracts at these prices can be made with competent and reliable surveyors, for the reason that the country is remote from the base of supplies, wages are high, the season in which it is possible to execute surveys is short, and the physical impediments are various and great."

Those statements, in some particulars, are applicable in a more pronounced and extended degree now than at that time, and it is sincerely hoped that the estimate may receive the favorable consideration of the Department and of Congress as well.

EXTRACT FROM REPORT.

When the history and conditions of this district are considered, it will be seen that the foregoing estimate is very reasonable and just. Its vastness is so well known that it is scarcely necessary to invite attention to it. It has an area sufficient for an empire. It has a larger surface than is included within the present boundaries of the original thirteen States of the Union; five-eighths as large as the territory acquired by the Louisiana Purchase; considerably in excess of the area ceded to the United States by Mexico under the terms of the Guadalupe Hidalgo treaty and the Gadsden Purchase combined, and nearly twice the extent of the Oregon country, which now embraces the States of Oregon, Washington, Idaho, and a part of Montana and Wyoming. This immense domain has been in the possession of the United States for a third of a century. It has added very materially to its business and prosperity. Since its accession, the value of the product of its fisheries has been about $70,000,000; of its furs, about $34,000,000, and the yield of its gold mines, $25,000,000. Its fur-seal industry alone has paid revenues into the United States Treasury, aggregating a sum about equal to the purchase price paid Russia for the whole Territory.

Notwithstanding all this, not an acre of this immense domain has been surveyed at the expense or under the system of public-land surveys of the United States. The country is not open for settlement under the ordinary meaning of the term, and the larger portion of its inhabitants have no place which they can truly call home. The provisions for acquiring title to nonmineral lands in Alaska, prior to extending the lines of public surveys over them, are too restrictive and involve too large an expense upon the part of the applicant to be of much benefit to the ordinary home seeker, and now that the law authorizes the extension of public surveys in it, adequate provision should be made for carrying it into effect.

While it is not claimed for Alaska that it is an agricultural country in the sense that farming would be a leading industry, still it has sufficient possibilities, in some lines of produce, to make it a factor worthy of consideration. Furthermore, the rapid development of its great mineral wealth is causing large numbers to settle within its borders. While a majority of these immigrants do not propose to make husbandry their principal occupation, still many of them desire to establish homes and acquire sufficient land for raising such vegetables as can be successfully grown, for poultry runs, and meadows for pasturage for milch cows and other stock needed for food supply or the convenience of the families.

It will be remembered, also, that no meridian or base lines have been established to govern surveys in this district. Of course it is essential that this be done before township or subdivision lines can be projected. Consequently quite a large expenditure is necessary before the object of the survey can be attained.

APPENDIX H.

REPORT OF TRANSACTIONS OF CUSTOM-HOUSE, PORT OF CONSOLIDATION, COLLECTOR'S OFFICE.

SIR: I have the honor to submit the following summary statement of the transactions of this office for the year ending June 30, 1900, viz:

Vessels entered from foreign ports	429
Vessels cleared for foreign ports	346
Vessels entered from domestic ports	541
Vessels cleared for domestic ports	478
Entries of merchandise for duty	657
Entries of merchandise free of duty	287
Entries for warehouse	14
Entries for warehouse and exportation	1,551
Entries from warehouse for consumption	10
Entries from warehouse for exportation	12
Certificates of registry granted	23
Certificates of enrollment granted	26
Licenses for coasting trade granted	54
Licenses to vessels under 20 tons granted	114
Value of exports:	
Domestic	$5,426.28
Foreign	226.30

RECEIPTS FROM ALL SOURCES.

Duties on imports	$62,591.30
Tonnage tax	3,232.64
Fines, penalties, and forfeitures	4,937.70
Miscellaneous customs receipts	2,203.15
Storage, labor and cartage, wharfage	2,101.15
Official fees	2,969.45
Total	78,035.39
Amount of refunds and drawbacks paid United States internal-revenue stamps	132.46

EXPENSES OF COLLECTION.

Fees retained by collector or surveyor	$1,500.00
Commissions allowed and paid to collector or surveyor, salaries of collectors, deputies, clerks, inspectors, weighers, storekeepers, etc	43,747.17
Expenses of weighers and gaugers	900.50
Rents	2,323.10
Miscellaneous expenses	3,539.02
Traveling expenses of collector	358.00
Total	52,369.79

NUMBER OF PERSONS EMPLOYED IN COLLECTOR'S OFFICE.

Collector	1
Deputy collectors	25
Clerks	2
Other employee, janitor	1
Inspectors	5
Stenographer	1
Total number employed during the year	35

Respectfully, yours,

W. D. McNair,
Special Deputy Collector.

Appendix I.

Parsonage of the Greco-Russian Church,
Sitka, Alaska, September 1, 1900.

Sir: In compliance with your request I have the honor to submit herewith the result of my first year's experiment in apiculture in Sitka, Alaska.

On May 31, 1900, received from Seattle, Wash., two hives with two swarms of bees at the cost of $25. These hives I placed in the yard adjoining the parsonage, and up to June 20, 1900, the bees increased to two more swarms, and on the 28th of same month two more swarms were added with a satisfactory result.

My experience during the summer showed that apiculture in Sitka is not only possible, but also profitable, as there are an abundance of nectariferous wild flowers and plants, also some vegetable gardens, and the experimental grounds of the agriculture department where buckwheat, clover, and various plants are raised, which furnish sufficient food for the bees. I noticed that during the hot, bright summer days a swarm of bees brings more honey than in Russia near St. Petersburg where apiculture is highly developed.

The season was not favorable for the apiculture industry, as the bees worked not more than fifteen days from June 1 to September 1. The old swarm of bees produced about 15 pounds of honey each hive for profit, besides 25 pounds left for their subsistence during the winter season. The new swarms have sufficient for their wants.

In connection herewith I would also state that the nectar here is in great quantity on account of the abundant morning dews.

Very respectfully,

Father Methodius,
Priest of the Greco-Russian Church, Sitka, Alaska.

Hon. John G. Brady,
Governor of Alaska, Sitka, Alaska.

Appendix J.

Newspapers.

The Alaskan, published at Sitka, weekly.
Douglas Island News, weekly.
The Record-Miner, published at Juneau, weekly.
The Truth, published at Juneau, weekly.
The Daily and Sunday Alaska Dispatch, published at Juneau.
The Skagway News, daily and weekly.
The Daily Alaskan, published at Skagway.
The Daily Chronicle, published at Nome.
The Nome Nugget, weekly.
The Nome News, daily.
The Arctic Weekly Sun, published at Nome.
Nome Gold Digger, weekly.

APPENDIX K.

OFFICE OF FOURTH ASSISTANT POSTMASTER-GENERAL,
Washington, September 5, 1900.

SIR: In compliance with the request of your clerk, dated August 15, 1900, addressed to the Second Assistant Postmaster-General, I inclose herewith a list of the post-offices established in the District of Alaska.

Very respectfully,
M. O. CHANCE,
Acting Fourth Assistant Postmaster-General.

Hon. J. T. BRADY,
Governor of Alaska, Sitka, Alaska.

List of post-offices in Alaska.

Anvik.
Apollo.
Chennik.
Chomly.
Circle.
Coppermount.
Dolomi.
Douglas.
Dyea.
Eagle.
Eaton.
Fort Wrangel.
Grindall.
Homer.
Hope.
Haines.
Jackson.
Juneau.
Karluk.
Kasaan.
Kenai.
Ketchikan.
Killisoo.
Klawock.
Koserefsky.
Koserifsky (never in operation).
Koyukuk.
Kutlik.
Kodiak.
Loring.
Mary Island.
Metlakahtla.
Novikakat.
Nulato.
Nushagak.
Nome.
Orca.
Peavey.
Petersburg.
Pyramid.
Rampart.
Revilla.
Sand Point.
Shakan.
Sitka.
Saint Michael.
Sealevel.
Seldovia.
Snettisham.
Skagway.
Star.
Sumdum.
Sunrise.
Tyoonok.
Teller.
Tanana.
Unga.
Unalaska.
Udakta.
Valdez.
Yakutat.
York.
Yukon.

APPENDIX L.

ALASKA COMMERCIAL COMPANY,
Nome, Alaska, August 21, 1900.

DEAR SIR: Inclosed please find statement of miners' supplies and prevailing prices which you requested.

Yours, truly,
ALASKA COMMERCIAL COMPANY,
Per OTTO W. CARLSON, *Agent.*

Governor BRADY, *Sitka, Alaska.*

Miners' supplies and prevailing prices, August 13.

Flour	sack	$2.25	Canned fruits		$8.00
Bacon	pound	.30	Evaporated fruits	pound	.20
Ham	do	.35	Canned vegetables		5.00
Butter	do	.50	Canned meats		9.00
Milk		12.00	Lard	pound	.20
Cream		10.00	Sirup	12 ½-gallon cans	10.00
Sugar	pound	.15	Baking powder	24 ½s	9.00
Beans	do	.10	Granulated potatoes	pound	.35
Rolled oats	100 pounds	7.50	Salt	do	.05
Corn meal	do	7.50	Pilot bread	do	.20
Tea	pound	1.00	Coal oil		5.00
Coffee	do	.40			

APPENDIX M.

SITKA, *October 1, 1900.*

SIR: In compliance with the provisions of chapter 1, section 32, in the new civil code for Alaska, approved June 6, 1900, I have the honor to transmit herewith my annual statement of receipts and disbursements of the historical library and museum fund from July to October 1, 1900.

Very respectfully,

WM. L. DISTIN,
Secretary of Alaska.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

Secretary of the District of Alaska, to Lowman & Hanford Stationery and Printing Company, Dr.

July 2, 1900, to stationery furnished the office of the secretary of Alaska for official use:

500 commission blanks	$10.00
500 gold seals, No. 26	2.00
6 bolts of ribbon	1.50
500 receipt blanks	4.50
Total	18.00

(Across face: Approved and payment authorized. John G. Brady, Governor of Alaska.)

OFFICE SECRETARY OF THE DISTRICT OF ALASKA,
Sitka, August 4, 1900.

The foregoing account is correct and just, the items thereof having been duly authorized.

WM. L. DISTIN,
Secretary of the District of Alaska.

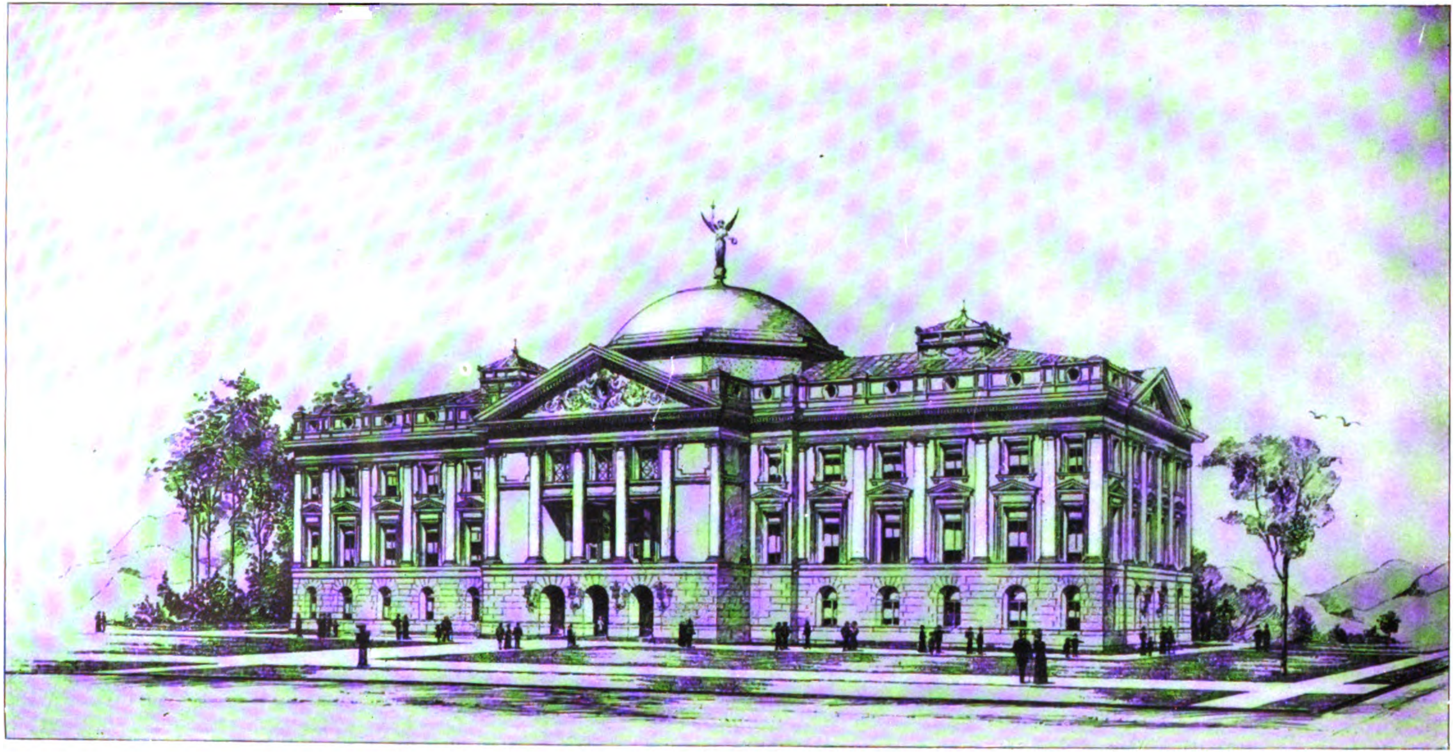
AUGUST 4, 1900.

Received from the Secretary of Alaska the sum of $18, in full payment of the above account.

LOWMAN & HANFORD STATIONERY AND PRINTING CO.,
Per MYERS, *Cashier.*

Statement of the receipts and disbursements of the District historical library and museum fund, office of the secretary of the District of Alaska, for the year ending September 30, 1900.

Dr.			Cr.		
1900.			1900.		
July 18	G. M. Rose, commission	$10	Aug. 4	To Lowman & Hanford Stationery and Printing Co., stationery as per voucher No. 1, herewith inclosed.	$18
Aug. 3	S. C. Smith, member of the bar	10			
8	J. W. Albright, commission	10			
8	W. J. Milroy, commission	10			
9	C. S. Hannum, commission	10			
10	James W. Griffin, commission	10			
10	Henry Sheldon, commission	10			
10	Philip C. Dibert, commission	10			
10	R. W. Bowen, commission	10			
10	Charles Udell, commission	10			
10	A. G. Green, commission	10			
10	J. F. Hobbes, commission	10			
10	H. B. M. Miller, commission	10			
10	E. E. Cunningham, commission	10			
10	H. L. Atkinson, commission	10			
10	Stephen B. Howard, commission	10			
10	W. P. Butler, commission	10			
10	Chas. E. Dickey, commission	10			
10	J. Cousby, jr., commission	10			
10	William H. Schooler, commission	10			
10	S. J. Lazarus, commission	10			
10	W. G. Palmer, commission	10			
10	A. H. Kenaga, commission	10			
10	C. S. Blackett, commission	10			
10	J. Sullivan, commission	10			
10	Geo. A. Leakley, commission	10			
10	A. J. Bruner, commission	10			
11	A. V. Dedrick, commission	10			
11	H. E. Shields, commission	10			
11	Arthur G. Thompson, commission	10			
11	P. H. Watt, commission	10			
11	S. A. Keller, commission	10			
11	H. A. Day, commission	10			
11	Elex Allardyce, commission	10			
11	Fred B. Chandler, commission	10			
11	Benjamin J. Tuffs, commission	10			
11	T. S. Thompson, commission	10			
11	John H. Kelley, commission	10			
13	C. A. Noyes, commission	10			
13	H. L. Van Winkle, commission	10			
16	Isaac J. Tomlinson, commission	10			
28	N. Gray, commission	10			
31	Chas. E. Hastings, commission	10			
31	M. F. Brown, commission	10			
31	Chas. E. Claypool, member of the bar	10			
31	V. L. Bevington, commission	10			
Sept. 4	Ralph H. Smith, commission	10			
4	Louis P. Shackleford, member of the bar	10			
18	T. G. Donohoe, commission	10			
18	T. R. Lyons, commission	10			
20	Edgar M. Barnes, member of the bar	10			
20	D. A. McKenzie, commission	10			
20	Geo. T. Hooper, commission	10	Sept. 30	To balance	512
	Total	530		Total	530



Capitol at Phœnix.

REPORT

OF THE

GOVERNOR OF ARIZONA.

EXECUTIVE DEPARTMENT OF ARIZONA,
Phœnix, Ariz., September 1, 1900.

SIR: I have the honor to submit the following report of the affairs, development, and resources of Arizona for the year ended June 30, 1900.

In my report for 1899 I published very exhaustive information in regard to the Territory with fully compiled statistics as to its conditions, historical and current; which report can be used as standard authority for several years. I have therefore not deemed it requisite to cover in detail this year all of the subjects comprehensively treated in my report for 1899. Congress authorized the publication of 4,000 extra copies of the report for 1899, which gave wide circulation to correct information on Territorial affairs.

POPULATION.

I have been unofficially informed by officers of the Census Bureau that the population of Arizona approximates 100,000 (excluding Indians), possibly a little less. In my judgment the Territory contains fully 105,000 people. The census having been taken in the hot summer months of June and July, when a large number of the inhabitants of southern and central Arizona (the most populous localities) were away from home at the sea coast and places of climatic resort, it is estimated that at least 10 per cent were not enumerated. The last school census recorded 20,800 children of school age, from which it is clearly evident that the Territory has a population of more than 100,000 people. The increase since 1890 has averaged about 5,000 annually, and immigration is largely made up of American citizens from other parts of the Union; the proportion of foreign immigrants annually is very small.

TAXABLE PROPERTY.

From the following statement of the taxable property of the Territory, which is compiled from the assessment rolls and the report of the Territorial board of equalization for the current year, it will be seen that the assessed valuation of the property in the Territory has increased more than one million and a quarter of dollars during the year, notwithstanding that under the present system a large amount of the taxable property is not returned to the various assessors, and the values of the property assessed are usually very low, which causes a higher rate of taxation than would be necessary were all the taxable property properly assessed and valued. As the community grows older and the disadvantages arising from the present system of low valuations and high rates of taxation are better understood by the people generally, the laws upon the subject will, no doubt, be so altered as to secure approximately full and correct returns of all property in the Territory subject to taxation. When assessments are had upon a just and equable system of valuation, the rate will be as low here as in any of the States. I have endeavored to present the importance of this subject clearly to the legislative branch of the Territorial government, and the commission now engaged in codifying and revising the laws, as authorized by the twentieth legislature, will correct the faults of our revenue system in this respect.

Tax levy for 1900.

Levy.	Per $100 valuation.
	Cents.
1. Territorial general fund (R. S., 2659)	35
2. Territorial insane asylum interest fund (R. S., 2473)	10
3. Territorial university interest fund (R. S., 2509)	2½
4. Territorial normal school fund (act 44, laws 1897)	3½
5. Territorial school fund (R. S., 1569)	3
6. Territorial interest fund (R. S., 2047 and act of Congress 1890)	14
7. Redemption fund (R. S., 2473)	3½
8. Interest world's fair bonds (act 103, laws 1891)	½
9. Capitol interest fund (act 9, laws 1897)	2
10. University fund (act 50, laws 1899)	4
11. Normal school fund (act 27, laws 1899)	1½
12. Capitol building fund (act 55, laws 1899)	3½
13. Insane asylum improvement fund (act 59, laws 1899)	2
Total	85

Final valuation of property in each county in Arizona in 1900.

APACHE COUNTY.

226,438 acres of land	$92,510.81
Improvements	25,543.75
784,031.39 acres railroad land	156,806.28
375 town and city lots	20,602.00
Improvements	45,649.50
1,776 range horses	17,992.00
752 work horses	21,200.00
376 saddle horses	7,508.00
10 stallions	725.00
56 mules	1,485.00
148 asses	858.00
8,877 range cattle	133,268.00
523 milch cows	9,576.00
5 bulls	120.00
111,426 sheep	222,852.00
715 goats	1,422.00
138 swine	424.50
54.48 miles railroad, standard gauge	136,198.99
All other property	177,327.08
Total	1,072,068.91

COCHISE COUNTY.

28,645 acres of land	$67,671.00
Improvements	83,500.00
64,318 acres land grants	72,818.00
339 mines	29,876.00
Improvements	113,629.00

2,116 town and city lots and improvements	$462,700.00
1,739 range horses	17,390.00
967 work horses	25,142.00
1,107 saddle horses	22,140.00
18 stallions	1,405.00
154 mules	3,850.00
118 asses	593.00
69,630 range cattle	696,300.00
157 graded cattle	4,710.00
295 milch cows	4,855.00
75 bulls	1,975.00
7,000 sheep	14,000.00
3,183 goats	6,348.00
99 swine	297.00
177.85 miles railroad, standard gauge	1,022,087.03
All other property	553,397.32
Total	3,204,683.35

COCONINO COUNTY.

25,154 acres of land	$86,679.40
Improvements	15,105.00
301,543.78 acres railroad land	60,308.75
369,965.77 acres land grants	116,857.67
4,608 town and city lots	181,774.00
Improvements	314,432.00
1,812 range horses	18,120.00
1,689 work horses	67,560.00
693 saddle horses	17,325.00
5 stallions	625.00
12 mules	480.00
95 asses	475.00
11,916 range cattle	123,330.60
42 beef cattle	840.00
174 milch cows	4,350.00
5 bulls	125.00
125,155 sheep	250,310.00
803 goats	1,606.00
268 swine	804.00
123.66 miles railroad, standard gauge	283,649.98
All other property	471,602.90
Total	2,016,360.30

GILA COUNTY.

4,068 acres of land	$14,265.00
Improvements	8,475.00
59 patented mines	137,050.00
Improvements	122,230.00
624 town and city lots	73,582.00
Improvements	160,547.00
1,348 range horses	14,070.00
429 work horses	11,880.00
1,211 saddle horses	24,220.00
15 stallions	625.00
121 mules	3,025.00
239 asses	1,314.00
33,751 range cattle	337,645.00
72 milch cows	1,475.00
7,040 sheep	14,140.00
5,754 goats	11,355.00
428 swine	1,474.00
All other property	325,590.00
Total	1,262,962.00

GRAHAM COUNTY.

14,593.2 acres cultivated land	$246,435.65
Improvements	202,250.00
24,030.4 acres uncultivated land	129,318.00
95 patented mines	213,432.95
Improvements on patented mines	238,521.00
Improvements on unpatented mines	54,825.00
1,554.2 town and city lots	61,497.75
Improvements	121,716.00
365 range horses	3,650.00
1,081 work horses	42,852.59
1,987 saddle horses	47,837.00
3 stallions	246.66
161 mules	4,623.98
119 asses	1,112.00
35,651 range cattle	356,510.00
13 beef cattle	160.00
718 milch cows	14,445.00
10 bulls	195.00
8,562 sheep	17,124.00
3,635 goats	7,270.00
636 swine	1,908.00
41 miles railroad, narrow gauge	128,246.80
All other property	731,487.62
Total	2,625,665.00

MARICOPA COUNTY.

270,734 acres of land	$3,201,524.00
Improvements	325,600.00
14 patented mines	7,300.00
Town and city lots	2,417,998.00
Improvements	1,376,122.00
1,999 range horses	25,526.00
2,887 work horses	76,093.00
10 stallions	500.00
175 mules	4,875.00
5 asses	250.00
17,536 range cattle	176,386.00
735 beef cattle	14,700.00
3,897 milch cows	96,965.00
20 bulls	500.00
13,344 sheep	26,688.00
700 goats	1,400.00
2,049 swine	5,122.50
97.09 miles railroad, standard gauge	579,721.13
All other property	1,232,110.48
	9,569,381.11
Deduct widows' exemptions	74,690.00
Total	9,494,691.11

MOHAVE COUNTY.

833.46 acres of land	$2,585.00
25,467.26 acres of railroad land	5,093.45
97 patented mines	77,396.57
Improvements	22,193.00
753 town and city lots	45,519.00
Improvements	82,905.00
879 range horses	17,580.00
252 work horses	12,600.00
1,075 saddle horses	37,625.00
1 stallion	50.00
22 mules	770.00
50 asses	250.00

19,411 range cattle	$194,110.00
137 milch cows	2,740.00
3 bulls	75.00
725 sheep	1,450.00
1,900 goats	3,800.00
63 swine	189.00
107.881 miles railroad, standard gauge	269,702.51
All other property	295,217.02
Total	1,071,790.55

NAVAJO COUNTY.

315,842.09 acres of land	$126,661.07
Improvements	39,399.00
718,444.36 acres railroad land	143,688.86
Town and city lots	122,595.84
Improvements	209,770.00
1,701 range horses	17,010.00
492 work horses	19,680.00
416 saddle horses	8,320.00
6 stallions	270.00
30 mules	900.00
73 asses	365.00
4,030 range cattle	48,360.00
421 milch cows	8,420.00
73,691 sheep	147,382.00
74 goats	148.00
216 swine	1,080.00
57.155 miles railroad, standard gauge	142,887.51
All other property	176,926.80
Total	1,213,864.08

PIMA COUNTY.

52,380 acres of land	$169,088.00
Improvements	106,746.00
25,888 acres land grants	6,472.00
Improvements	2,000.00
162 patented mines	60,210.00
Improvements on patented mines	13,950.00
Improvements on unpatented mines	56,820.00
Town and city lots	730,415.00
Improvements	971,329.00
1,683 brood mares	17,370.00
342 range horses	3,775.00
824 work horses	21,590.00
849 saddle horses	16,980.00
36 stallions	1,415.00
161 mules	4,045.00
28 asses	140.00
34,245 range cattle	342,455.00
210 milch cows	4,605.00
226 bulls	4,615.00
3,590 sheep	7,180.00
210 goats	420.00
233 swine	703.00
64.75 miles railroad, standard gauge	408,658.30
All other property	628,248.00
Total	3,579,229.30

PINAL COUNTY.

54,558 acres of land	$403,550.00
Improvements	114,413.30
30 patented mines	101,500.00
Improvements	2,500.00

938 town and city lots	$42,096.00
Improvements	58,690.00
2,283 horses	31,712.00
135 mules	3,375.00
10 asses	40.00
21,961 cattle	259,109.00
1,000 sheep	2,000.00
138 swine	414.00
80.29 miles railroad, standard gauge	491,621.48
All other property	279,680.00
Total	1,790,700.78

SANTA CRUZ COUNTY.

5,742 acres cultivated land	$31,778.00
Improvements	27,320.00
51,682 acres uncultivated land	28,980.00
53,301 acres land grants	24,145.00
41 patented mines	20,500.00
Improvements	65,650.00
398 town and city lots	124,020.00
Improvements	270,212.00
1,059 range horses	10,590.00
398 work horses	10,348.00
452 saddle horses	9,152.00
20 stallions	945.00
120 mules	3,000.00
44 asses	185.00
16,121 range cattle	162,675.00
111 milch cows	1,687.00
80 bulls	3,250.00
9 sheep	18.00
25 goats	50.00
50 swine	150.50
52.4 miles railroad, standard gauge	195,976.00
All other property	42,170.00
Total	1,032,801.50

YAVAPAI COUNTY.

72,608.08 acres of land	$176,988.86
Improvements	109,270.00
231,711.59 acres of railroad land	54,404.14
Improvements	20,900.00
99,445.21 acres of land grants	62,153.13
Improvements	5,600.00
362 patented mines	464,838.00
Improvements on patented mines	547,458.00
Improvements on unpatented mines	227,450.00
Town and city lots	466,203.00
Improvements	639,581.00
3,564 range horses	35,640.00
1,711 work horses	47,287.00
1,299 saddle horses	33,655.00
15 stallions	755.00
80 mules	2,350.00
166 asses	1,414.00
43,120 range cattle	431,200.00
542 milch cows	10,725.00
64,422 sheep	128,844.00
3,296 goats	6,592.00
362 swine	1,086.00
60.558 miles railroad, standard gauge	151,396.01
All other property	806,641.59
Total	4,432,431.73

YUMA COUNTY.

11,681.53 acres cultivated land	$30,414.60
Improvements	5,385.00
16,668.09 acres uncultivated land	18,119.55
Improvements	10,006.00
19 patented mines	2,928.00
Improvements	4,150.00
Improvements on unpatented mines	79,734.00
477 town and city lots	85,679.50
Improvements	87,775.00
77 range horses	900.40
874 work horses	22,724.00
16 saddle horses	320.00
4 stallions	170.00
95 mules	2,375.00
13 asses	56.00
653 range cattle	7,188.00
701 beef cattle	14,020.00
167 milch cows	2,622.00
17 bulls	320.00
17 goats	34.00
516 swine	1,548.00
82.5 miles railroad, standard gauge	520,684.06
All other property	88,064.27
Total	985,217.38

Statement of the aggregate amount of each object of taxation in the Territory for the year 1900.

1,175,657.85 acres cultivated and uncultivated land	$4,826,568.94
Improvements	1,073,013.05
2,674,116.36 acres land grants and railroad lands	702,747.28
Improvements	28,500.00
1,218 patented mines	1,114,971.52
Improvements	1,549,110.00
Town and city lots	4,471,982.09
Improvements	4,701,428.50
43,070 horses	843,095.65
1,322 mules	35,153.98
1,102 asses	7,052.00
326,258 cattle	3,476,606.60
415,964 sheep	831,988.00
20,312 goats	40,445.00
5,196 swine	15,200.50
999.614 miles railroad	4,330,829.80
All other property	5,733,773.08
Total	33,782,465.99

Final valuations placed on railroads for the year 1900.

	Number miles.	Rate per mile.	Total valuation.
Southern Pacific R. R	392.500	$6,811.32	$2,477,195.00
Maricopa and Phœnix and Salt River Valley R. R	34.380	4,910.50	168,823.00
New Mexico and Arizona R. R	87.800	3,740.00	328,372.00
Arizona and New Mexico R. R	41	3,127.97	128,246.80
Arizona and Southeastern R. R	40.2	6,078.55	244,358.00
Central Arizona R. R	11	1,000.00	11,000.00
Saginaw Southern R. R	6	1,000.00	6,000.00
Santa Fe Pacific R. R	386.734	2,500.00	966,835.00
	999.614	....	4,330,829.80

Total valuation, by counties, for the year 1900.

County.	Valuation.
Apache	$1,072,068.91
Cochise	3,204,683.35
Coconino	2,016,360.30
Gila	1,262,962.00
Graham	2,625,665.00
Maricopa	9,494,691.11
Mohave	1,071,790.55
Navajo	1,213,864.08
Pima	3,579,229.30
Pinal	1,790,700.78
Santa Cruz	1,032,801.50
Yavapai	4,432,431.73
Yuma	985,217.38
Total valuation for 1900	33,782,465.99
Total valuation for 1899	32,509,520.29
Net gain over 1899	1,272,945.70

Average valuations.

Land, cultivated and uncultivated	per acre	$4.10
Land grants and railroad land	do	.26
Horses	per head	19.58
Mules	do	26.60
Asses	do	6.40
Cattle	do	10.65
Sheep	do	2.00
Goats	do	2.00
Swine	do	2.92
Railroads, standard gauge	per mile	4,445.00
Railroads, narrow gauge	do	3,128.00
Railroads, logging roads	do	1,000.00

In addition to the above there are 462 miles of railroad in the Territory exempted from taxation for a term of years.

Under an agreement between the northern counties and the railroad the Santa Fe Pacific is taxed on a gross valuation of $2,500 per mile. If this low valuation is excluded from the above figures the average valuation of standard-gauge railroads would be $5,801 per mile.

Statement of the bonded and floating indebtedness of the Territory, June 30, 1900.

Date.	Title.	Time (years).	Rate (per cent).	Amount.
July 1, 1885	Insane asylum bonds	20	7	$60,000.00
Jan. 1, 1887	Arizona University bonds	20	7	7,000.00
Jan. 15, 1888	Territorial funding bonds	25	6	140,000.00
July 15, 1892	.....do	50	5	2,000,000.00
Jan. 15, 1896	.....do	50	5	300,000.00
July 1, 1892	World's fair bonds	20	5	30,000.00
June 1, 1898	Capitol building bonds	50	5	100,000.00
Total				2,637,000.00
Deduct county and city indebtedness				1,634,027.57
Bonded debt account of Territory				1,002,972.43
Floating debt (general-fund warrants)				124,710.67
Total				1,127,683.10
Cash in hands of treasurer available for the redemption of the above Territorial indebtedness				56,833.03
Net indebtedness account of Territory				1,070,850.07

Condition of Territorial banks, June 30, 1900.

RESOURCES.

	Loans, discounts, and overdrafts.	Stocks, securities, and claims.	United States bonds.	Real estate, furniture, and fixtures.	Cash and due from banks.
The Bank of Arizona	$272,952.07	$4,647.46	$50,000.00	$42,000.00	$438,567.13
The Valley Bank	408,248.75	36,582.75	....	29,054.68	108,467.72
Arizona Central Bank	254,521.79	14,554.86	....	7,361.95	77,539.33
International Bank	68,828.57	9,531.49	....	4,457.57	86,392.47
The Bank of Bisbee	30,232.57	4,419.07	....	1,582.53	128,423.56
The Bank of Globe	60,345.07	908.25	....	9,000.00	69,981.81
The Bank of Safford	66,538.37	3,751.92	....	3,000.00	37,781.86
Farmers and Merchants' Bank	76,114.20	3,587.28	....	3,061.00	33,954.34
Gila Valley Bank	41,672.89	12,127.02	....	964.02	34,520.31
P. Sandoval & Co	22,043.79	9,293.96	....	1,260.39	37,974.60
The Bank of Clifton	20,038.55	1,304.79	....	812.55	29,266.22
The Mesa City Bank	17,195.64	5,529.00	....	10,477.62	10,525.11
Western Investment Banking Co.	26,637.06	....	....	....	3,573.19
Home Savings Bank and Trust Co.	20,317.80	1,125.10	....	469.97	8,954.71
Old Dominion Commercial Co	....	43,818.45	....	....	63,619.77
E. F. Kellner & Co.	....	87.63	....	....	17,572.00
Total	1,385,687.12	151,269.08	50,000.00	113,502.28	1,187,113.63

LIABILITIES.

	Capital stock.	Surplus and undivided profits.	Deposits.	Total.
The Bank of Arizona	$50,000.00	$16,000.00	$742,166.66	$808,166.66
The Valley Bank.	100,000.00	28,659.32	453,694.58	582,353.90
Arizona Central Bank	40,000.00	1,628.38	312,349.55	353,977.93
International Bank	25,000.00	1,347.34	142,862.76	169,210.10
The Bank of Bisbee	25,000.00	1,196.23	138,461.50	164,657.73
The Bank of Globe	25,000.00	1,058.38	114,176.25	140,234.63
The Bank of Safford	10,000.00	9,051.52	92,020.63	111,072.15
Farmers and Merchants' Bank	24,000.00	3,469.01	89,247.81	116,716.82
Gila Valley Bank	25,000.00	....	64,284.24	89,284.24
P. Sandoval & Co	20,000.00	3,457.27	47,115.47	70,572.74
The Bank of Clifton	12,500.00	1,275.27	37,646.84	51,422.11
The Mesa City Bank	10,400.00	51.46	33,275.91	43,727.37
Western Investment Banking Co	200.00	130.37	29,879.88	30,210.25
Home Savings Bank and Trust Co.	6,450.00	40.47	24,377.11	30,867.58
Old Dominion Commercial Co.	22,500.00	22,139.69	62,798.53	107,438.22
E. F. Kellner & Co.	....	....	17,659.63	17,659.63
Total	396,050.00	89,504.71	2,402,017.35	2,887,572.06

Condition of national banks June 29, 1900.

[From statements made to the Comptroller of the Currency June 29, 1900.]

RESOURCES.

	Loans, discounts, and overdrafts.	Stocks, securities, and claims.	United States bonds and premium.	Cash, and due from banks.	United States redemption fund.	Banking house, furniture, and fixtures.
Phoenix National Bank, Phoenix	$521,899.75	$67,493.53	$106,490.00	$205,282.15	$5,000.00	$6,813.40
National Bank of Arizona, Phoenix	266,102.42	10,888.17	25,000.00	98,873.92	1,250.00	3,500.00
Prescott National Bank, Prescott	314,957.91	11,994.99	52,375.00	159,617.67	2,500.00	....
Consolidated National Bank, Tucson	335,118.55	38,128.60	12,500.00	440,825.78	622.50	16,804.83
Arizona National Bank, Tucson	119,285.21	23,951.54	13,000.00	247,810.22	562.50	1,590.24
Total	1,557,363.84	152,456.83	209,365.00	1,152,409.74	9,935.00	28,708.47

Condition of national banks June 29, 1900—Continued.

LIABILITIES.

	Capital stock.	Surplus and undivided profits.	National-bank notes outstanding.	Deposits.	Total.
Phoenix National Bank, Phoenix	$100,000.00	$62,291.06	$100,000.00	$653,843.92	$916,134.98
National Bank of Arizona, Phoenix	100,000.00	42,904.78	24,500.00	243,850.33	411,255.06
Prescott National Bank, Prescott	100,000.00	42,865.49	48,600.00	349,980.08	541,445.57
Consolidated National Bank, Tucson	50,000.00	22,296.27	12,450.00	759,253.99	844,000.26
Arizona National Bank, Tucson	50,000.00	14,589.68	2,250.00	339,360.03	406,199.71
Total	400,000.00	284,947.23	187,800.00	2,346,288.35	3,119,035.58

Comparative statement, Territorial banks.

	1899.	1900.	Gain.
RESOURCES.			
Loans, discounts, and overdrafts	$920,106.29	$1,385,687.12	$465,580.83
Stocks, securities, and claims	61,136.18	151,269.03	90,182.85
United States bonds (par value)	75,000.00	50,000.00	....
Real estate, furniture, and fixtures	78,851.39	113,502.28	34,650.89
Cash and due from banks	539,901.99	1,187,113.63	647,211.64
Total	1,674,995.85	2,887,572.06	1,237,576.21
Decrease, United States bonds	....	....	25,000.00
Net gain	....	....	1,212,576.21
LIABILITIES.			
Capital stock	229,700.00	396,050.00	166,350.00
Surplus and undivided profits	59,042.48	89,504.71	30,462.28
Deposits	1,386,253.42	2,402,017.85	1,015,763.93
Total	1,674,995.85	2,887,572.06	1,212,576.21

Number of banks in 1899, 8; in 1900, 16; gain, 8.

Condition of the building and loan associations June 30, 1900.

RESOURCES.

Building and loan association.	Loans on real estate.	Loans on stock.	Sundry assets.	Real estate.	Cash.
Tucson	$176,900.00	$1,881.00	$5,746.87	....	$897.05
Citizens	96,092.85	1,960.00	2,216.84	....	17,095.54
Phœnix	109,941.84	2,556.52	4,409.59	$19,521.75	11,183.83
Nogales	41,400.00	....	1,216.25	780.00	3,219.01
Total	424,334.69	6,397.52	13,589.55	20,301.75	32,395.43

LIABILITIES.

Building and loan association.	Capital stock accumulating.	Undivided profits.	Sundry accounts.	Bills payable.	Total.
Tucson	$181,055.01	....	$1,269.91	$3,100.00	$185,424.92
Citizens	115,760.23	....	1,605.00	....	117,365.23
Phœnix	144,262.31	$17.34	3,333.88	....	147,613.53
Nogales	46,577.29	29.64	8.33	....	46,615.26
Total	487,654.84	46.98	6,217.12	3,100.00	497,018.94

SETTLEMENT OF LANDS.

Statement of entries in the United States land office, Tucson, Ariz., for the year ending June 30, 1900.

Class of entry.	Entries.	Acres.
Original homesteads	199	26,897.96
Final homesteads	60	8,180.33
Original desert	89	16,755.31
Final desert	21	3,761.98
Cash entries	20	1,660.01
Final timber culture	1	160
Lieu land entries	49	4,915.25
Mineral entries	27	1,725.22
Total	466	64,056.08

Status of lands in the district.

County.	Area unappropriated and unreserved.			Area reserved.	Area appropriated.	Total area of county in district.
	Surveyed.	Unsurveyed.	Total.			
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Apache	21,206	18,009	39,215	204,980	2,805	247,000
Cochise	1,451,865	2,130,279	3,582,144	135,077	264,779	3,982,000
Gila	42,011	391,890	433,901	745,807	31,792	1,211,500
Graham	767,856	2,096,804	2,864,660	1,010,000	263,340	4,138,000
Maricopa	949,917	2,684,726	3,634,643	193,000	598,357	4,426,000
Navajo	....	....	....	70,000	....	70,000
Pima	1,119,521	4,514,672	5,634,183	91,414	441,893	6,167,500
Pinal	808,997	2,125,795	2,934,792	295,970	243,738	3,474,500
Santa Cruz	205,135	409,568	614,703	160,320	24,477	799,500
Yuma	618,138	3,863,311	4,481,449	110,000	340,551	4,932,000
Total	5,984,646	18,235,054	24,219,700	3,016,568	2,211,732	29,448,000

Transactions for the fiscal year ending June 30, 1900, in the United States land office at Prescott, Ariz.

Class of entry.	Entries.	Acres.
Sales of mineral lands	36	1,211
Sales of lands under act of August 23, 1894	9	790
Public land sales, Camp Verde Military Reservation	5	200
Homestead entries commuted to cash under section 2301, Revised Statutes	17	2,714
Original homestead entries	33	5,305
Final homestead entries	57	8,633
Original mineral applications	58	2,758
Original desert land entries	15	2,556
Final desert land entries	2	200
Total	232	24,367

Statement showing area of land unappropriated, etc.

County.	Area unappropriated and unreserved.			Area reserved.	Area appropriated.	Total area of land surface of the county in land district.
	Surveyed.	Unsurveyed.	Total.			
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Apache	1,017,556	690,157	1,707,713	3,977,886	1,226,401	69,120,000
Coconino	614,781	5,456,205	6,070,986	4,922,545	699,469	11,693,000
Gila	41,085	1,295,600	1,336,635	378,127	3,238	1,718,000
Maricopa	153,448	1,217,691	1,371,139	40	3,821	1,375,000
Mohave	983,299	7,394,856	8,378,155	384,790	46,055	8,809,000
Navajo	1,269,034	643,820	1,912,854	3,395,820	1,012,146	6,320,820
Yavapai	822,946	3,272,958	4,095,904	520,770	504,326	5,121,000
Yuma	....	1,193,900	1,193,900	201,600	....	1,395,500
Total	4,902,099	21,165,187	26,067,286	13,781,578	3,495,456	43,344,320

RAILROADS AND COMMERCE.

Railroad construction during the past year amounted to a total mileage of 74, the Santa Fe and Grand Canyon Railroad Company having built 55 miles of standard-gauge road and the Morenci Southern 19 miles, from Morenci to Guthrie, in Graham County.

The increased cost of steel rails, structural iron, and all kinds of building material generally has operated against new construction, but with prices tending downward it is confidently expected that work on new roads will be actively pushed.

Many promising mining districts tributary to roads already in operation are clamoring for better transportation facilities, and surveys and reconnoissances are being pushed in many directions.

The difference between wagon freights and transportation by rail would permit the profitable operation of many mines that are now idle or upon which development work only is being done, and the anxiety of owners of such properties to cooperate with companies contemplating new construction will insure a greatly increased mileage in the Territory in the near future. The rapid growth of the district reached by the Prescott and Eastern Railroad furnished good evidence of the effect of improved transportation facilities.

Among the enterprises now under consideration is the extension of the Prescott and Eastern Railroad into the heart of the Bradshaw Mountains. Preliminary surveys have been finished and a practicable line located, that will open an immense district to cheap transportation.

Consideration is also being given to a line designed to leave the Santa Fe, Prescott and Phoenix Railway at Congress Junction, running thence 30 miles north and west into the Hillside mining district.

The Santa Fe and Arizona Southern Railroad Company has been incorporated, to build from Seligman, on the Santa Fe Pacific Railroad, south for a distance of 90 to 100 miles, penetrating the mining districts near Hillside. Preliminary surveys have been completed, and the company announces its intention to begin work immediately.

Surveyors are also at work on a narrow-gauge belt railroad line to leave the Prescott and Eastern Railroad at Huron Station, running thence up Big Bug Creek, and around through the McCabe and Little Jessie districts, and back to the main line. Construction has been commenced on a railroad from Bisbee, in Cochise County, to Nacosari, in Sonora, Mexico, a distance, according to their survey, of about 70 miles. Fifteen miles of this road will be in Arizona and will be finished by the first of the year.

The Morenci Southern (narrow gauge) is a marvel of engineering skill. In ascending the mountains, a distance of 19 miles with a 4 per cent grade, it crosses itself five times by loops and tunnels.

The roads now in operation in the Territory are as follows:

	Gauge.	Miles.
Southern Pacific of Arizona, extending along the southern part of the Territory from Yuma, on the Colorado River, to the eastern boundary of Cochise County, passing through the counties of Yuma, Maricopa, Pinal, Pima, and Cochise	4.8½	383
Santa Fe Pacific, crossing north of the center of the Territory, near the thirty-fifth parallel, and passing through the counties of Apache, Navajo, Coconino, Yavapai, and Mohave	4.8½	393
Santa Fe, Prescott and Phoenix, running from Ash Fork, on the line of the Santa Fe Pacific, through the counties of Yavapai and Maricopa to Phoenix	4.8½	197

	Gauge.	Miles.
Gila Valley, Globe and Northern, running from Bowie, on the Southern Pacific, in Cochise County, to Globe, Gila County	4.8½	14
New Mexico and Arizona, running from Benson, on the Southern Pacific, in Cochise County, to Nogales, in the same county, at the Mexican line	4.8½	87
Arizona and New Mexico, running from Clifton, in Graham County, to the Southern Pacific at Lordsburg, N. Mex	3	71
Arizona and Southeastern, running from Bisbee, Cochise County, to Benson, on the Southern Pacific, in the same county	4.8½	54
Maricopa and Phoenix and Salt River Valley, running from Maricopa, Pinal County, on the Southern Pacific, to Phoenix, Maricopa County, with a branch from Tempe, Maricopa County, to Mesa, in the same county	4.8½	43
Prescott and Eastern, running from a point on the Santa Fe, Prescott and Phoenix, Yavapai County, to Mayer, in the same county	4.8½	27
United Verde and Pacific, running from Jerome Junction, on line of Santa Fe, Prescott and Phoenix Railway, to Jerome, Yavapai County	3	26
Congress Gold Company, running from Congress Junction, on Santa Fe, Prescott and Phoenix, in Yavapai County, to the Congress mine	4.8½	4
Arizona and Utah, running from McConnico Junction, on the Santa Fe Pacific, in Mohave County, to Chloride, in the same county	4.8½	23
Santa Fe and Grand Canyon Railway, running from Williams, Coconino County, north toward the Grand Canyon	4.8½	55
Branch of Arizona and Southeastern, running from Bisbee to Naco	4.8½	6
Total	....	1,509

EXPORTS AND IMPORTS.

The commerce between Arizona and the Republic of Mexico is on the increase from year to year. Most of the business is done through the custom-house at Nogales, although Naco is destined to share materially in the business in the future, a railroad from that point to important mining districts in Mexico being now under construction.

Through the courtesy of Hon. W. M. Hoey, the collector of customs at Nogales, the following statistics are given for the fiscal years 1899 and 1900:

Statement of imports into the district of Arizona during the fiscal years ending June 30, 1899, and June 30, 1900, respectively.

CONSUMPTION.

When imported.	Free.	Dutiable.	Total imports.	Duties collected.
1899.				
July	$170,874	$6,786	$177,660	$2,066.59
August	211,718	6,539	218,252	2,078.39
September	208,913	7,933	216,846	3,017.26
October	252,497	21,083	273,580	8,175.38
November	329,887	98,063	427,950	58,452.75
December	363,425	79,955	443,380	88,817.30
1900.				
January	419,061	28,665	447,726	9,117.60
February	274,996	18,814	293,810	5,063.72
March	230,762	30,294	261,056	10,686.63
April	182,292	22,698	204,990	6,686.04
May	243,147	28,433	271,580	11,070.70
June	140,682	12,364	153,046	4,254.52
Total, 1899–1900	3,028,249	361,627	3,389,876	159,486.88
Total, 1898–1899	2,853,150	290,737	3,143,887	126,566.72
Increase	175,099	70,890	245,989	32,920.16
Additional duties not accounted for in above	....	....	....	222.76
Total increase in duty collected	....	....	....	33,142.92

Number of dutiable and free entries, fiscal years 1899 and 1900.

Year.	Dutiable entries.	Free entries.
1898-1899	705	384
1899-1900	810	347
Increase	105	....
Decrease	....	37

Cost of collecting revenue.

1898-1899	$27,231.87
1899-1900	23,934.70
Decrease	3,297.17

Warehouse and immediate transportation.

When imported.	Values.	Duties.
1899.		
July	$58,857	$11,926.25
August	56,945	11,621.61
September	31,186	6,317.94
October	90,959	23,069.42
November	102,197	19,240.90
December	85,986	18,904.80
1900.		
January	54,842	11,968.96
February	52,822	9,557.19
March	58,885	17,206.01
April	58,854	12,453.60
May	67,638	17,290.82
June	50,329	12,581.99
Total 1899-1900	769,500	172,129.49
Total 1898-99	1,392,637	356,824.74
Decrease	623,137	184,695.25

Number of cattle imported, free and dutiable, with value of dutiable.

Year ending June 30—	Dutiable.	Free.	Value of dutiable.
1899	18,937	908	$167,244
1900	18,271	681	190,130
Decrease	666	227	....
Increase	....	....	22,886

Duties levied and collected on cattle.

Year.	Number of head.	Duties collected.	Average duty per head.
1898-99	18,937	$61,664.73	$3.25
1899-1900	18,271	62,083.03	3.39

Exports.

Year.	Total value.
1898-99	$1,518,980
1899-1900	1,785,066
Increase	266,086

AGRICULTURE AND HORTICULTURE.

Throughout the greater portion of this year the whole Territory has suffered more or less from the drought which has prevailed over the Pacific coast country, and in consequence the supply of water for irrigation has been below the average. But notwithstanding this fact the year upon the whole has been a prosperous one, and conditions at which the farmers and the fruit raisers of Arizona complain would be considered as most gratifying by Eastern communities.

The agricultural interests of the Territory are largely dependent upon the water supplied by the Gila and Salt rivers, and the question of water storage, discussed at length in my report of last year, is a topic which has engaged the attention of the people this year more than ever. The farmers of the Salt River Valley, in the neighborhood of Phoenix, having created a wealth assessed at approximately $10,000,000 in city and country—a wealth but little short of $30,000,000 in reality—and having demonstrated that they have a soil and climate not surpassed anywhere, have definitely determined to have water storage, and during the past few months have perfected an organization, which also embraces the principal business men of Phoenix, with a view to arriving at a practicable solution of the storage problem. As I explained last year, there is no question but that the Salt River ordinarily will furnish sufficient water to irrigate a half million acres. No more attractive investment for capital can be found than in providing storage for the region tributary to Phoenix, and it is now evident that if capitalists do not embrace the opportunity in the near future the people of the valley will provide the means, either through an issue of county bonds or some other practicable method. With water storage the Salt River Valley would easily support a population of a half million people. It is already one of the most prosperous regions in the United States, and with an ample water supply its development can be measured only in conjecture.

The valley of the Gila offers similar opportunities for capital.

The development of artesian water has been an important feature of the year's progress in the valley of the Upper Gila, in the vicinity of Safford, and in the valley of the San Pedro, near Benson. A considerable area has been brought under cultivation in the localities named from artesian wells, and the discoveries of artesian flow have awakened widespread interest.

Explorations on an extensive scale for artesian water have been prosecuted in the Salt River Valley, also, near Mesa; but so far without success, although wells have been sunk to a depth of 1,500 feet, which is slightly below sea level.

The agriculturists and horticulturists of the Territory are an educated, intelligent people, and they follow with much interest the results announced from time to time by the experiment station of the Territorial University. Below will be found a comprehensive review of the year's work at the station, furnished by Mr. R. H. Forbes, the director, for this report:

> Because of the great diversity in elevation, latitude, climate, and cultural methods, the agriculture and horticulture of Arizona are wonderfully varied in character.
>
> The first settlers of the Territory were chiefly attracted by mining and grazing interests, but in later years an increasing proportion of a growing population has been engaged in irrigation farming. The returns from agricultural work are most

satisfactory—indeed, rarely excelled when adequate skill is used. Arizona, however, is a law unto herself in matters of agriculture, and both ability and experience are usually demanded of her farming population.

The Agricultural Experiment Station is actively assisting in the solution of the many problems in agriculture and horticulture which arise in this new situation. The opportunities for usefulness of such an institution in a newly settled district are very great, and in this instance are only limited by available funds and the working ability of the members of the station staff.

During the past year much has been accomplished by the station in the study of irrigation water supply and of methods of irrigation, in the culture of staple crops and the choice of varieties, and in the methods of stock and dairy feeding.

Much of the best work of the station has been done in cooperation with the United States Department of Agriculture, whose specialists, upon invitation, have worked on stated problems as desired. Of this nature has been the soil and alkali survey of the Salt River Valley, which has resulted in an accurate map of the different varieties of soil and of the amount and distribution of alkaline salts in a district 20 miles wide and 50 miles long. The date-palm orchard, also, is maintained under a cooperative arrangement with the Department.

During the season, also, the station has continued the work of past years with sugar beets, on the Upper Gila, with results that are thus far very satisfactory.

Much attention, also, has been devoted to the writing and distribution of brief, plainly written, and timely information on agricultural topics, in addition to the usual quota of longer and more scientific bulletin publications of the station.

The location of the laboratories and offices of the station at Tucson has been of advantage because of the availability of the university library and facilities, and also because the three great agricultural districts of the Territory—Yuma, Salt River Valley, and the Upper Gila—are equally accessible from this point.

With the establishment of a permanent and profitable agriculture, the Territory enjoys far greater stability than when, as formerly, her people depended chiefly upon the fluctuating mining and grazing industries for a livelihood. Although but a small percentage of the total area of Arizona is under cultivation, yet when the actual amount and productiveness of these lands is considered, the place of agriculture among the industries of the Territory is very important. Arizona has and always will have land in excess of the water supply available for irrigation, without which agriculture can, excepting in rare instances, hardly be considered. Out of about 72,800,000 acres in the Territory only 5,700,000 acres are privately owned, of which about 450,000 acres are under irrigation ditches. For the total amount of land under ditch there is not sufficient water in all instances to insure crops, but in time there can be little doubt that the storage and development of water will lead to the successful irrigation of much more than the area under ditch.

The future of agriculture in Arizona is, without question, most promising, and for the reason that the conditions of soil, irrigation, and climate combine to produce an uncommon variety and amount of marketable produce. The soil of Arizona, as is usual with the soils of arid regions, is rich in the elements of fertility, requiring only the ever-needful water, skill, and industry in their management to secure abundant returns. The fertility of cultivated soils in irrigated regions is further assured by the deposit of silt brought upon the land with irrigation water. The problems of fertilization which become so serious in humid sections are therefore of much less importance here, and not to be so carefully reckoned with in connection with the future of our agriculture.

The most marked advantage in connection with agriculture and horticulture, especially in southern Arizona, is the climate. From January to June the temperature resembles that of spring and early summer in the latitude of Kentucky. From June to September the climate is of subtropical fervor, while from September to November there is a second mild season of temperate weather. The winter season, from November to January, though subject to sharp frosts in southern Arizona, is not seriously or even uncomfortably cold.

Owing to this combination of seasons a remarkable variety of crops may be found in the same locality at different times of the year. Strawberries, which flourish in Greenland, may be found on the same land with dates and palms from Sahara. Alfalfa, the great forage of the arid West, flourishes alongside with wheat, corn, and sorghum, respectively characteristic of Minnesota, Illinois, and Kansas. Oranges, lemons, and olives from California may be found in the same neighborhood with peanuts and sweet potatoes from Virginia. In brief, many of the leading crops of both temperate and subtropical countries, which are not affected by a too arid atmosphere or by the frosts of winter, flourish in southern Arizona. In northern Arizona, where the temperatures more resemble those of northern Illinois, many of the more distinctively temperate-region crops flourish, such as potatoes, apples, and various small fruits.

Very profitable specialties are constantly being here and there developed, as determined by particular advantages in situation or market. Tomatoes, cantaloupes, and watermelons for early market at home and abroad, and vegetables and small fruits for the mining town markets are often very remunerative.

When with this diversity of products and strong market demand is coupled a healthful and, for the most of the year, agreeable climate, it will be seen that agriculture in Arizona possesses distinct advantages.

STAPLE CROPS.

Alfalfa.—Probably the most important crop in Arizona is alfalfa. With at least five and as high as eight cuttings a year possible, it may be stated that probably nowhere in the United States does this plant yield more abundantly.

It has several values in our agriculture. First, as hay there is a constant market at good prices in the adjoining mining country. During the past three years the short crop in California, with resulting high prices, has led to an annual output of hay from Arizona. This fact, among other things, illustrates the advantage of an irrigated region over one depending for crops upon rainfall. A more profitable use for alfalfa, ordinarily, is as a stock fattener. It is so employed in feeding hogs and cattle, also in connection with a growing dairy industry. It is estimated that during 1899 about 35,000 head of cattle fattened on alfalfa were shipped from Salt River Valley. With improved methods of feeding, this output can doubtless be greatly increased.

With butter now being shipped into Arizona from Kansas, it is also evident that there is yet room for the growth of the dairy industry. There are now four creameries and cheese factories in the Territory, with probably more to come in the near future.

Another very important use of alfalfa is as a soil renovator. Our semiarid desert soils are commonly dense and deficient in humus and nitrogen—circumstances leading to a condition of poor tilth, which often makes successful culture of ordinary crops a difficult matter. Alfalfa, however, flourishes in these soils, and in so doing loosens them to considerable depths by means of its roots, and through its processes of growth and decay, contributes the much desired humus nitrogen to the soil. In this way alfalfa serves as a preparation for other crops; and it is a matter of common observation that orchards, wheat, sugar beets, and other crops all flourish best on ground which has previously been in alfalfa.

Corn.—It is only within the past few years that it has been known that fine crops of corn may be grown in the warmer regions of Arizona. Large crops of this product are annually grown on the Upper Gila, in Graham County, and the acreage in Maricopa County is annually increasing. In order that the grain may properly fill, corn must be planted in July, or sufficiently late so that in maturing it will just escape fall frosts. The poor varieties of Mexican corn formerly grown in Arizona are giving way to the improved white Dent varieties from the North and East. Our seasons are sufficiently long to grow a crop of corn after harvesting a crop of wheat or barley.

In connection with alfalfa, and together with other forages of like nature, corn will probably prove more valuable in helping to make out a more perfect ration for cattle. Sorghum, root crops, and Kaffir corn are likely to prove valuable for the same purpose.

Wheat.—The acreage and amount of wheat produced in Arizona is increasing each year. It is largely a winter and spring crop, maturing before the extremely dry weather of summer, when water is scarce. Large, flourishing mills at Phoenix, Tempe, Tucson, Solomonville, and Safford are supplied by Arizona grown wheat. The chief variety cultivated heretofore has been the Sonora wheat, but there is room for useful experiment in securing other successful varieties for Arizona, in order to obtain a better milling combination than is afforded by the Sonora wheat alone. A number of experimental plats containing the most promising foreign varieties have been grown for two years past at the experimental farm near Phoenix, yielding promising results in some cases. The average yield in the principal wheat-growing sections of the Territory is stated to be from 20 to 30 bushels per acre.

Barley.—Barley is chiefly grown in Arizona as a hay crop, being cut and baled for this purpose before maturity. Certain varieties of beardless and hulless barley have recently been introduced in a few places and are attracting some attention. The yield of grain per acre is stated to be from 30 to 50 bushels.

During the past year Egyptian and Kaffir corn have yielded very promising results at the station farm. In the case of Egyptian corn, in particular, three successive crops of forage and a heavy yield of grain were secured from one planting. These varieties, together with sorghum, being drought-resisting far more than ordinary corn, their possible importance is considerable.

ROOT CROPS AND VEGETABLES.

Many of the most important root crops thrive in Arizona. The common potato grows wild in certain parts of the Territory. In the northern valleys, where irrigation is possible, heavy crops of potatoes are grown. During the long mild spring season potatoes may also be grown with marked success in the irrigated portions of southern Arizona. The chief difficulty in southern Arizona, however, is to preserve the potatoes after they are once grown, since in this warm section their tendency is to sprout and continue their growth shortly after maturity.

Sweet potatoes of excellent quality and in great quantity can be grown. Peanuts have also produced well, although their culture has as yet hardly passed the experimental stage.

Sugar beets and field beets yield abundantly if planted early enough in the year to mature before the extremely hot weather of midsummer. Fall planted sugar beets of good quality have also been found to endure the light frosts of winter and to mature the succeeding spring. While this fact may not of itself prove commercially important, it may still indicate the profitable culture of similar plants, such as mangels, which may be used for stock feeding.

Garden vegetables in unusual variety may be produced if skillful attention is paid to the planting season. As mentioned above, there are two mild, temperate seasons in southern Arizona—one extending from January to June, the other from September well into November. Certain of the more quickly growing vegetables, therefore, may be made to produce both in the spring and fall, this double season being recognized by the more experienced residents of this section. Among the vegetables most successfully grown are watermelons, which ripen about the 1st of July, and constitute a profitable crop in some sections of the Territory. Other vegetables which will succeed in northern Arizona, as well as in warmer localities with proper care, are cabbages, pease, onions, cauliflowers, and various others which are gradually being added to the list from time to time as the methods of culture are becoming better understood.

FRUITS.

In northern Arizona and on the Upper Gila, where the climate is more temperate in character, peaches, grapes, and apples of superior quality are grown. Apricots and grapes are grown and shipped in large quantities from Salt River Valley. Raisins are also produced in considerable amount in this part of Arizona. Oranges of superior quality are produced in some sections of southern and southwestern Arizona. They have the advantage of a season earlier than that of southern California, while in addition the fruit is uncommonly bright and attractive in appearance. This is due to the fact that the scale insects perish from the effects of the dry, hot atmosphere, leaving the fruit unmarred by their presence. In certain favored situations protected from frost, lemons have proved a success in Salt River Valley, and are said to be also a promising crop in the vicinity of Yuma. Strawberries in skillful hands have proved a profitable crop in Salt River Valley, the entire product finding a ready market in Arizona. Figs grow luxuriantly in southern Arizona, but require a constant and abundant supply of water in order to yield well. Almonds have been grown with varying success, the great drawback to their culture being the late spring frosts, which are likely to destroy the crop. For the past two years, however, the growers have in some instances succeeded in warding off the disastrous frosts by smudging their orchards at critical times. In this way valuable crops have been secured, especially in the vicinity of Mesa City.

Olives are a very promising crop. This tree requires comparatively little water, and the scale, which is so abundant upon the tree in California, is not found upon it in Arizona. Experts state that the trees grown in Arizona are unusually bright and attractive in appearance and their fruit of good quality. The product of the olive trade also, either in the form of pickles or oil, may be held for the best market and is of small weight and bulk in comparison with its value, shipping charges being thus economized. It is not improbable that this fruit has a growing future in the Territory, since the demand for olive products is at present throughout the United States far in excess of the supply.

SUGAR BEETS.

The work of the experiment station with sugar beets has been continued for the season of 1900, both at the experimental farm and on the Upper Gila. The results on the Upper Gila, in the vicinity of Thatcher and Pima, where the station has maintained a workman in charge of the beets, have been especially interesting, since this locality seems to possess peculiar advantages for the establishment of a factory if the beets should succeed. The results were much damaged by the unprecedented shortage of irrigating water this year, yet, in two or three plots favorably located, a yield of sugar was obtained comparing favorably with results obtained on the experimental farm. Provision has been made for continuing the work another year, when it is expected that the experience of the first year will lead to an even more favorable demonstration.

This work is of especial significance in connection with the drought and consequent partial failure of the beet crop for three years past in California. Attention has in consequence been turned to irrigated districts capable of growing beets, and has led to a favorable disposition of manufacturers toward such districts.

THE DATE PALM.

During the past year much progress has been made by the experiment station with the date palm. The last consignment of suckers received from North Africa is safely installed in the orchard south of Tempe, and is now (August, 1900) being daily watered and cared for during the critical period after planting.

These palms were brought to Arizona under the cooperative arrangement between the United States Department of Agriculture and the experiment station, by which the Department is to bear all the expense of importation while the station undertakes to properly care for them. The first shipment, a small one, was received a year ago and planted, and has just been followed by the present large one, consisting of 450 palms of 26 different varieties gathered in the oases of Biskra, Ourlana, M'zab, and others in the French possessions of North Africa. The entire cost of the shipment thus far is estimated at about $4,000.

The consignment was secured and forwarded by Mr. Walter T. Swingle, agricultural explorer for the Department, who was in Arizona last December studying the situation with reference to date culture. Shortly after leaving Arizona, he proceeded to Algeria and resumed the work he had begun one year before in securing suckers from the most desirable varieties of date palms. It was first planned to ship the suckers rooted and growing in tubs of earth, but on account of the great cost in freight of this method, the suckers were finally packed in boxes, for the most part with damp sphagnum moss about the butts.

The shipment, consisting of 23 cases, weighing 8 tons, left Algiers June 11, reached New York City July 2, and was transported from there to Maricopa via New Orleans free of charge by the Southern Pacific Company, and from Maricopa to Petersens by the Maricopa and Phœnix and Salt River Valley Railroad in the same liberal manner, finally arriving at their destination July 17 in most excellent condition.

At Petersens the palms were taken in charge by the experiment station force, hauled to the orchard, unpacked, fumigated to destroy scale and noxious insects, the butts soaked in water, and the palms then planted as rapidly as possible. Two cases of 35 suckers, after fumigation, were repacked and shipped to Berkeley and Pomona, Cal., and 20 suckers more were taken to the experimental farm northwest of Phœnix. The remaining 400 occupy a space of about 6 acres, being planted in two sections, the first section quincunx, 20 feet apart; the second section in the same order, 30 feet apart.

The present (August, 1900) condition of the transplanted suckers is excellent, and a very large percentage bids fair to live and thrive. Much of the Parlatoria scale was found on the young trees, but the fumigations appear to have killed most of this, and subsequent fumigations in the field will doubtless complete the disinfection.

It will be some three or four years before the trees commence to bear, and before suckers will be available for distribution to the public; but the date palm, though slow, is long lived and extremely hardy when once established.

Contrary to one's first judgment, the alkali ground in which the palm orchard is located is most excellent for the purpose. It is stated that the quality of the fruit is improved by the alkali and, indeed, the Arabs are said to collect alkali and place it around their trees. The Tempe orchard tract, again, is fortunate in being subirrigated even at the present extremely dry time, thus lessening the labor of land irrigation.

The significance of this experimental orchard, especially to the alkaline districts of the warmer southwest, is very great. The date is a great staple fruit, being the principal food stuff of whole tribes in northern Africa and western Asia. The best dates, at the high prices commanded for a good article, should apparently yield as good profits as oranges. If, therefore, these choice imported trees succeed in Arizona, alkali land will be greatly enhanced in value and an important use discovered for such lands.

THE LIVE-STOCK INDUSTRY.

The Territory of Arizona is peculiarly adapted to the raising of cattle and live stock. Here, owing to the total lack of inclement weather, vast herds roam over the 57,000 square miles of range that are open to the cowman the year around, and fatten on the succulent grama grasses of the mesas and river bottoms, while numerous flocks of sheep browse on the rich grasses and undergrowths of the northern hills.

Owing to the extremely mild seasons that obtain throughout the year the cost of handling and caring for live stock is reduced to the minimun, while productiveness is greatly increased as compared with more rigorous climates, and therefore grazing holds out greater inducements to capital for investment here than in other sections of the United States.

One of the drawbacks in the past has been a shortage of water during long protracted dry seasons. This has been overcome to a great extent in many localities by the sinking of wells.

The number of cattle on our ranges has decreased probably 20 per cent in the last two years, owing to the heavy shipments that have been made, caused by the brisk demand and high prices that have obtained at the great market centers.

The tendency for grading up has been apparent for a number of years, and the Arizona range cattle of to-day are far above the standard of cattle in many other range States. The wisdom of this improved breeding became manifest from the first to cattle raisers, and the consequent gain in weight and price has amply repaid the outlay involved in importing graded stock for breeding purposes.

As in the past, contagious disease of live stock is practically unknown here, except in occasional imported animals, and when discovered disease can be invariably traced to some outside source. Under our sanitary law the Territorial veterinarian is authorized to deal promptly with such cases and thereby prevent the spread of disease.

Recent activity in the horse market has stimulated many to reembark in this most profitable and important branch of stock raising, for the conditions here are as nearly perfect as possible for the successful raising of horses. The rocky mountains and gravelly plains serve to develop muscles and feet, while the climatic conditions and varying altitudes develop the lung power, so essential to a hardy animal. All these natural local advantages, taken in conjunction with the importation of the best products of horseflesh of Pennsylvania, Indiana, Kentucky, and other great horse centers for stud purposes, have resulted in the production of Arizona horses that can not be excelled in any quarter of the globe.

Under the law all cattle coming into or leaving the Territory are required to be inspected both for health and brands and marks, and a complete record of every individual animal is to be found in the office of the Live Stock Sanitary Board. All cattle that are slaughtered for food are required to be inspected in a similar manner, and every hide is required to be tagged before being disposed of by the butcher.

There are upwards of 100 inspectors employed under the direction of the sanitary board to do this work, all of whom make regular reports to the board of their official acts, and each inspector is required to file a bond to insure the faithful performance of his duties.

All brands and marks are recorded by the Live Stock Sanitary Board instead of the counties, as heretofore, and the value of thus centralizing the records of this important business can not be over estimated, as it greatly facilitates the tracing of lost animals and also enables the owners of the various brands of cattle to tally their sales with the official records and thereby prevent possible leakage or unlawful handling of cattle. It also enables the board to keep an abstract of ownership of all stock brands and furnish much valuable information and protection to individual owners and prospective buyers.

The sanitary conditions are under the supervision of a skilled veterinarian, appointed by the governor, who works in conjunction with the board.

The following figures express the numbers of live stock shipped and slaughtered for the fiscal year ending June 30, 1900, and are compiled from the official records in the office of the sanitary board.

Cattle shipped out of the Territory	160,714
Cattle shipped from point to point in Territory	29,249
Cattle slaughtered by licensed butchers	28,986
Horses shipped out of Territory	2,221
Hogs shipped out of Territory	5,154
Mules shipped out of Territory	22
Asses shipped out of Territory	2

MINING.

For the mining industry, the past year has been the most prosperous in the history of the Territory, and the year's record clearly demonstrates that Arizona is sure to become the greatest and most profitable mining section in the country. In former years the phenomenal production of a few great copper, gold, and silver mines gave the Territory a reputation as a producer of precious metals, but the fact that Arizona possesses incalculable mineral wealth has had tardy recognition. The Territory has never experienced a mining "boom;" the development of this industry has been slow but sure and substantial. Inaccessibility and lack of transportation facilities have been the principal drawbacks. These obstacles have now been largely overcome by the construction of railroads into the most important mining districts. The mistaken idea has prevailed to some extent, also, that Arizona's mines do not "go down," and more or less prejudice has been created against the Territory on that account. This erroneous theory has been entirely exploded. Deep mining has proven that values frequently increase in depth, and it is not improbable that deeper mines will be worked in Arizona than on the famous Comstock lode of Nevada. During the past year the attention of investors and prospectors outside of the Territory has been enlisted as never before, and sales and contracts for sales have been numerous. There has been a notable increase in the production of gold, which will be still more pronounced during the coming year. One of the remarkable features has been the revival in silver mining. The building of new railroads has enabled the owners of silver properties to make shipment of ore at a profit, and in some sections of the Territory silver mining is active and profitable.

The prominence which Arizona has achieved as a steady producer of the precious metals, and the certainty that the production will be augmented in the future, justify me in urging that a Government assay office and branch mint be established in the Territory. Assay offices are generally conducted at a profit to the Government and there is every reason to believe that such would be the case with an office established in Arizona, while the substantial encouragement thus held out to the mining industry of the Territory would be very beneficial.

In copper mining, in the increased capacity of copper smelters, in the location and development of new discoveries, and in the influx of Eastern capital for the purchase of copper mines and prospects, the year has been remarkable. The output of copper has increased at a marvelous rate, and if, as there is every reason to expect, this rate of increase is maintained, Arizona in a very few years will lead the United States in copper production. One of the features peculiar to Arizona copper mines is the continuity of the ore bodies.

The almost fabulous production of some of Arizona's great copper mines, and the remarkable success of mining ventures in this Territory, together with the high price of copper and the active trading in copper stocks, have afforded opportunities for speculators and stock jobbers to unload upon overcredulous Eastern investors a great deal of worthless mining stock, and companies have been organized upon quite a number of undeveloped prospects in Arizona, and capitalized far beyond any reasonable valuation, and through much advertising and extravagant misrepresentations have sold stock throughout the Eastern States, amounting, I am told, in par value, to several millions of dollars and upon which no return whatever can be reasonably expected. No doubt such methods are more or less practiced always where mining is active and prosperous. The mineral wealth of Arizona is immeasurable, and honest mining is almost always a sure road to fortune.

Attention is invited to my report for 1899 for comprehensive and detailed information in regard to mining and precious metals in Arizona; also historical and geological data upon the progress and development of this great industry.

Accurate information as to the yield of the precious metals is not obtainable. For the year 1899 Wells, Fargo & Co. estimated that the value of Arizona's production of gold, silver, lead, and copper was $20,363,421, but I am convinced that this estimate is too low.

FORESTS.

Arizona has the largest unbroken pine forest in the United States, covering an area of over 8,000 square miles. This timber is usually found at an altitude between 5,500 and 7,500 feet. The total quantity of pine timber fit for sawing purposes within the boundaries of the Territory amounts to 10,000,000,000 feet, which can supply the needs of a populous State for more than a century. The principal forest area is in Coconino County and borders the Grand Canyon of the Colorado, although Gila, Apache, and Yavapai counties have considerable timber. In the Mogollon Mountains in Yavapai, Coconino, and Gila counties there are large bodies of oak timber suitable for the manufacture of farm machinery, wagons, etc., and for finishing lumber, but at present it is too inaccessible to be of great commercial value. The Government has created some large forest reserves in northern Arizona and promulgated rules for their regulation with a view to their preservation from spoliation and to prevent destruction by fire. The principal lumber mills of Arizona are situated at Flagstaff and Williams, in Coconino County, on the line of the Santa Fe Pacific

Railway, and their equipment is modern in every way. The Arizona Lumber and Timber Company at Flagstaff and the Saginaw Lumber Company at Williams have as complete plants for the manufacture of lumber, boxes, etc., as can be found in the United States.

The forests of Arizona are Sonorian in character and belong to the interior forest area, which covers all that region embraced between the forests of the Pacific and the extreme western limit of the Atlantic region. The forests of much of this area, when compared with those of more humid regions, are more stunted in growth, fewer individuals to a given area, and with much less variation in their composition. However, the forests of the southern portion of this area, which includes Arizona, are heavy, dense, and valuable, when compared with other portions of the interior region.

In this Territory the valuable forests are confined to the higher portions of the Colorado plateau and to the slopes and canyons of our numerous mountains. They attain their highest development in the high San Francisco Mountains, and from here stretch away with more or less extended interruptions to and beyond the Grand Canyon of the Colorado to the north, to Bill Williams Mountain in the west, and southward to the great rim where the Colorado plateau breaks down to the southern plains.

To the southwest, with a number of interruptions, they become dense and heavy in the higher ranges of the White Mountains, and from here extend into western New Mexico. Long arms of forest area also extend into all the mountains immediately south of the Colorado plateau, which reach an elevation of more than 7,000 feet. The isolated ranges farther south are also timbered above 7,500 feet. The great forest area embraced in the Coconino and San Francisco region is considered by our greatest authority on American forests as one of the largest unbroken forests in the United States. It is almost entirely of yellow pine (*Pinus ponderosa*) and its varietal forms. This species of pine is the most widely disseminated and abundant tree of the interior forest area, and in Arizona, where it reaches its highest development, is practically the only tree of commercial importance in the manufacture of lumber.

On the higher mountains of northern Arizona, above the area of yellow pine, are a number of trees usually considered valuable for lumbering purposes, but their restricted area and inaccessibility render them as yet of little commercial value.

INDIGENOUS TREES AND SHRUBS FOR SHADE AND ORNAMENTAL PURPOSES.

The people of Arizona do not properly appreciate the value of nature's trees and shrubs to plant about their homes for ornamental and shade purposes. We can not expect to bring trees and shrubs from regions where they have been accustomed to humid atmosphere and grow them with any degree of success in Arizona.

We are inclined to look to foreign countries and other States for our ornamental trees and shrubs when, with a little care in selection, we can find in our own flora a variety of such plants that will grow with a minimum amount of care and in a few years surpass in appearance anything which we may bring in from outside. Generations of exposure to the conditions of an arid region enable them to survive and even flourish where plants unaccustomed to such environment perish.

The ash is one of our most valuable trees for street planting. Its growth is rapid, and it is but little affected by insects. The cottonwood, although not so desirable as the ash, gives dense shade during the summer, grows with great rapidity, and requires little care. If in planting care is exercised to plant only staminate trees, no cotton will be produced and the chief objection to them removed. The desert willow, a beautiful tree with catalpa-like flowers, one of the most graceful trees in America, grows along the water courses of southern Arizona, and should take the place of many trees which we now get from outside.

It is hoped that the people of Arizona will give more attention to our native trees and shrubs, as they are more in harmony with our surroundings and better adapted to the purposes of landscape gardening. Many of our shrubs are evergreen, while others have attractive flowers or fruits. By proper care in selection they are in the end much more satisfactory and less liable to die than imported plants.

The preservation of the forests through reservations by the Government, and the watchful care of rangers and supervisors appointed to guard them, can not fail to protect and increase tree growth in the Territory, and, it is believed, increases precipitation and conserves moisture and the water supply for irrigation and agricultural purposes.

EDUCATION.

The public schools of the Territory are in a flourishing condition. Nearly 21,000 children between the ages of 6 and 18 are enrolled in the public schools. Teachers of the best ability only are employed and are well paid. The education of all children is compulsory under the law, and there is hardly a hamlet, however remote, which does not enjoy ample school facilities. I am confident that the national census of this year will show that the percentage of illiteracy among the English speaking population is so low as to place Arizona in the front rank with the most fortunate States in that respect. The superintendent of public instruction, Hon. R. L. Long, has made an able and exhaustive report on the educational affairs of the Territory, and from this report the following very interesting extracts are taken:

In the closing year of the century it is well to take a retrospective glance, recall the earlier days of Arizona's public schools, and, with such retrospection, submit a brief statement of advancement.

The earliest record of public funds being used for public-school purposes is found in the proceedings of the first legislative assembly, which convened at Prescott in 1864, from which it appears that appropriations were made from the Territorial treasury for the benefit of the public schools in the towns of Prescott, Lapaz, and Mohave of $250, each, provided that said towns appropriate a like sum. The sum of $500 was appropriated at the same time to the school in Tucson, conditioned that instruction be given daily in the English language. No further mention is made of public schools in any legislative proceedings until 1868, from which it is inferred that whatever schools were in operation during the interim received their support from private sources. In the year last named the first attempt at school legislation was made, and the first public-school law was enacted. This law was replaced by another in 1871, and that by another in 1875, which remained in force until 1879. Changed conditions seemed to require further changes in the law, for in 1879, in 1881, and in 1883 others were passed; but these were all repealed in 1885, when the present law was enacted, which, with slight amendments, has governed the schools to the present time.

The year 1885 may be fixed upon as the date when the school "system" of the Territory was established. In that year the thirteenth legislature rounded out and perfected the system by the establishment and endowment of the normal school at Tempe and the university at Tucson, so that now the laws of Arizona provide for the free education of every child within its borders, from his admission into the primary school until his graduation from the university.

There are no records in this office showing the condition of the schools prior to 1885, hence no statistics relating to the schools prior to that date can be given. The following table, however, shows what progress has been made in educational matters since 1885:

Year.	Total receipts.	Total expenditures.	Number of schools.	Days school was maintained.	Census of children.	Average daily attendance.	Valuation of school property.
1885	$186,666.12	$188,164.83	137	120	10,219	3,226	$212,389
1886	159,956.14	135,030.89	150	140	....	3,507	201,984
1887	120,044.88	117,004.74	169	143	10,308	3,602	176,238
1888	157,707.03	130,212.14	184	124	....	3,849	222,219
1889	179,782.35	150,543.41	197	135	12,588	4,298	222,958
1890	201,288.70	177,483.83	219	126	12,976	4,702	268,435
1891	236,743.24	198,762.43	237	127	13,874	5,047	297,444
1892	247,201.69	207,897.62	251	124	14,710	5,198	320,609
1893	266,068.87	221,213.28	265	130	15,463	5,340	344,646
1894	205,610.63	176,671.02	289	124	16,203	6,791	405,446
1895	211,277.94	203,016.41	261	120	15,909	7,034	414,447
1896	219,116.10	214,450.88	293	126	16,936	7,641	428,985
1897	219,777.92	205,949.12	337	128	17,427	8,983	445,379
1898	250,278.63	224,185.90	347	130	18,802	9,011	472,107
1899	295,883.91	241,555.94	375	127	19,823	9,396	490,504
1900	421,776.15	345,314.29	398	125	20,833	10,177	529,024

Reports covering the period embraced by this report have been received from all the county superintendents and treasurers. The statistics contained in these returns have been carefully compiled, and will be found in tabular form at the close of this report. Those for the year 1899 contain a summary of the financial and school statistics for that year. The tables for 1900 exhibit in detail the condition, financially and otherwise, of every school district in the Territory on the 1st day of July of this year.

In the following general summary of the more important items reported in detail in the tables, attempt has been made to present in condensed form the result of the work of the schools for each of the years covered by this report:

SCHOOL POPULATION AND ATTENDANCE.

	1898–1899.	1899–1900.
Children between 6 and 18 years of age	19,823	20,833
Children between 8 and 14 years of age	10,953	12,416
Children between 6 and 18 years of age who attended private schools	522	463
Children between 6 and 18 years of age who have not attended school	4,681	4,583
Children between 6 and 18 years of age who have attended denominational schools	783	749
Children enrolled in the public schools	15,893	16,504
Average daily attendance	9,396	10,177
Percentage of school population enrolled	80	79¼
Percentage of enrollment in daily attendance	60	61

SCHOOL DISTRICTS AND SCHOOLS.

School districts	250	257
New schoolhouses built	4	17
Grammar schools	112	122
Primary schools	268	276
Kindergarten schools	1	1
High schools (under special law)	1	1
Average number of days school was taught	127	125
Volumes in school libraries	6,146	8,160

TEACHERS.

	1898-1899.	1899-1900.
Male teachers employed	122	109
Female teachers employed	251	290
Normal school graduates employed	90	85
Holding first-grade certificates	....	277
Holding second-grade certificates	....	97
Average salary of male teachers	$74.70	$76.90
Average salary of female teachers	$64.44	$63.40
Teachers examined	128	165
First-grade certificates issued	....	29
Second-grade certificates issued	....	64

RECEIPTS AND EXPENDITURES FOR SCHOOL MAINTENANCE.

Apportioned from Territorial school fund	$10,000.00	$11,100.88
Received from county taxes	168,378.72	175,864.29
Received from poll taxes	31,962.34	29,817.68
Received from special taxes for support of schools	3,825.82	12,898.36
Received from licenses, fines, etc	37,969.66	48,849.46
Received from sale of bonds	....	40,798.33
Expended for teachers' salaries	178,114.32	189,189.02
Expended for contingent expenses, fuel, etc	48,542.43	45,953.32
Expended for school libraries	286.79	477.59
Expended for apparatus	2,437.24	3,053.73
Expended for school furniture	9,214.25	6,477.12
Expended for buildings	....	54,580.00
Cost of education per capita on school population	11.43	11.28
Cost of education per capita on enrollment	14.13	14.24
Cost of education per capita on attendance	24.12	23.10

SCHOOL PROPERTY AND BONDED DEBT.

Valuation of lots, buildings, and furniture	$465,037.00	$502,249.00
Value of libraries	6,002.00	6,245.00
Value of apparatus	19,465.60	20,530.00
Bonded debt of districts	....	228,537.00

COST OF SUPERVISION.

Territorial:		
Salaries of superintendent and board of examiners	$1,350.00	$1,350.00
Printing, postage, and express charges	600.00	600.00
County:		
Salaries of superintendents and of boards of examiners, and contingent expenses	6,690.27	7,814.22

School census statistics May 1, 1900.

Counties.	White children between 6 and 18.			Colored children between 6 and 18.			Total between 6 and 18.	Children between 8 and 14.	
	Boys.	Girls.	Total.	Boys.	Girls.	Total.		White.	Colored.
Apache	490	394	884	....	....	....	884	547	....
Cochise	955	901	1,856	7	2	9	1,865	1,086	6
Coconino	330	330	660	2	4	6	666	332	2
Gila	390	396	786	13	8	21	807	418	14
Graham	1,721	1,716	3,437	8	3	11	3,448	2,070	7
Maricopa	2,244	2,122	4,366	12	16	28	4,394	2,256	6
Mohave	177	174	351	....	....	....	351	....	....
Navajo	414	425	839	13	9	22	861	509	22
Pima	1,427	1,393	2,820	3	6	9	2,829	1,490	3
Pinal	457	417	874	1	3	4	878	431	2
Santa Cruz	513	486	999	5	2	7	1,006	622	3
Yavapai	1,036	941	1,977	9	8	17	1,994	1,078	10
Yuma	428	422	850	....	....	....	850	502	....
Total	10,582	10,117	20,699	73	61	134	20,833	12,841	75

School census statistics May 1, 1900—Continued.

Counties.	Children between 6 and 18 who have attended public schools at any time during the school year.		Children between 6 and 18 who have attended private schools but no public schools at any time during the school year.		Children between 6 and 18 who have not attended any school during the school year.		Children between 6 and 18 who have attended denominational schools at any time during the school year.	
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.
Apache	765	....	4	....	90	....	....	....
Cochise	1,407	1	34	....	413	....	7	....
Coconino	525	4	1	....	83	2	51	....
Gila	560	....	47	....	91	8	....	....
Graham	2,111	2	157	....	1,099	8	69	....
Maricopa	3,629	25	77	....	465	3	195	....
Mohave	298	....	2	....	25	....	....	....
Navajo	767	20	3	....	66	2	4	....
Pima	1,308	7	28	....	1,076	2	408	....
Pinal	712	4	2	....	158	....	2	....
Santa Cruz	533	....	19	....	401	....	7	....
Yavapai	1,523	13	77	1	222	8	6	....
Yuma	461	....	11	....	361	....	....	....
Total	14,599	76	462	1	4,550	33	749	....

Counties.	Nativity of children. (Include only those enumerated in columns 1 and 2.)			
	Native born.			Foreign born.
	Native parents.	One parent foreign.	Both parents foreign.	
Apache	759	85	37	3
Cochise	895	234	640	96
Coconino	572	26	53	15
Gila	373	13	89	0
Graham	2,107	471	508	362
Maricopa	3,146	447	701	100
Mohave	247	66	22	....
Navajo	703	105	46	7
Pima	739	620	1,156	314
Pinal	364	110	347	57
Santa Cruz	218	142	381	244
Yavapai	1,361	211	130	148
Yuma	319	188	325	3
Total	11,803	2,718	4,435	1,349

Financial statement—county treasurers' reports 1899–1900.

County.	Receipts.				
	Balances, July 1, 1899.	Territory.	County taxes.	Poll taxes.	Licenses, fines, etc.
Apache	$230.01	$516.88	$6,984.79	$321.25	$718.54
Cochise	5,886.28	857.92	14,806.82	3,357.03	5,947.95
Coconino	5,053.31	383.60	7,162.34	2,592.87	3,521.90
Gila	17,169.61	385.28	6,770.58	1,763.00	4,201.60
Graham	14,300.05	1,677.20	15,217.24	5,143.50	3,203.40
Maricopa	32,556.77	2,499.28	52,677.08	2,527.53	10,978.05
Mohave	1,437.49	162.96	4,042.17	543.25	1,432.70
Navajo	2,840.46	501.76	9,963.43	1,939.50	2,289.90
Pima	3,723.86	1,495.76	16,424.61	2,049.75	5,309.00
Pinal	....	466.48	8,158.21	1,154.25	786.95
Santa Cruz	993.26	636.72	7,596.25	1,089.00	2,536.42
Yavapai	9,827.99	1,104.88	19,004.23	6,283.75	6,622.20
Yuma	1,726.65	412.16	7,056.54	1,053.00	1,300.85
Total	85,745.74	11,100.88	175,864.29	29,817.68	48,849.46

Financial statement—county treasurers' reports 1899–1900—Continued.

County.	Receipts.			
	Special taxes.	Sale of bonds.	Miscellaneous sources.	Total receipts.
Apache	$161.98		$615.63	$9,549.08
Cochise	401.50			31,257.50
Coconino			2,443.36	21,157.38
Gila		$12,925.09	1,353.26	44,568.42
Graham	117.00	9,843.35	91.00	39,529.74
Maricopa	11,632.23		8,667.75	121,538.69
Mohave	571.50	2,029.89		10,219.96
Navajo			985.60	18,430.65
Pima			394.00	29,396.98
Pinal	14.15			10,580.04
Santa Cruz		16,000.00	14.00	28,865.65
Yavapai			1,838.85	44,681.90
Yuma			887.96	11,937.16
Total	12,898.36	40,798.83	16,701.41	421,776.15

County.	Expenditures.					
	School maintenance.	Building purposes.	Miscellaneous interest, etc.	Supervision.	Total expenditures.	Balances June 30, 1900.
Apache	$7,457.89		$41.12	$330.00	$7,829.01	$1,720.07
Cochise	24,977.57			462.00	25,439.57	5,817.93
Coconino	12,891.42		1,145.00	511.55	14,547.97	6,609.41
Gila	14,784.86	$19,916.11	490.00	455.25	35,646.22	8,922.20
Graham	21,287.96	9,334.80	10.50	480.65	31,613.91	7,978.83
Maricopa	74,505.20	6,328.46	18,016.79	1,196.00	100,046.45	21,492.24
Mohave	6,388.92	1,993.93		412.75	8,795.60	1,424.36
Navajo	12,092.46		538.11	453.65	13,084.22	5,346.43
Pima	24,607.11	2.00	138.61	1,127.10	25,874.82	3,522.16
Pinal	8,795.99		25.00	375.00	9,195.99	1,384.05
Santa Cruz	9,002.55	16,000.00		496.72	25,499.27	3,366.38
Yavapai	35,786.54		936.60	1,141.55	37,864.69	6,817.21
Yuma	8,601.91	504.70	397.96	372.00	9,876.57	2,060.59
Total	261,180.38	54,580.00	21,739.69	7,814.22	345,314.29	76,461.86

School statistics—July 1, 1899, to June 30, 1900.

County.	Number of schools.	Grade.		Boys enrolled.	Girls enrolled.	Total enrollment.	Average number belonging.	Average daily attendance.	Percentage of attendance on average number belonging.	Months school was maintained.	Teachers employed.
		Grammar.	Primary.								
Apache	19	6	13	459	399	858	612	556	90	5.3	19
Cochise	33	10	23	740	705	1,445	1,009	924	91	7	33
Coconino	15	8	7	303	262	565	400	374	96	6.8	15
Gila	18	13	5	282	282	564	432	405	93	6.3	18
Graham	45	9	36	1,244	1,245	2,489	1,726	1,516	88	5.6	45
Maricopa	96	25	71	2,058	2,051	4,109	2,653	2,476	93	7	96
Mohave	12	6	6	155	150	305	221	202	92	6.1	12
Navajo	24	9	15	479	493	972	747	693	93	6.06	24
Pima	33	7	26	875	660	1,535	1,004	907	88	6.75	34
Pinal	16	4	12	326	320	646	481	390	90	5.8	16
Santa Cruz	16	5	11	398	342	740	462	421	89	6.25	16
Yavapai	57	17	40	941	846	1,787	1,178	1,050	89	6.3	57
Yuma	14	3	11	236	253	489	295	263	90	6.1	14
Total	398	122	276	8,496	8,008	16,504	11,170	10,177	91	6.25	399

School statistics—July 1, 1899, to June 30, 1900—Continued.

County.	Volumes in library.	Visits made by school trustees.	Money received during year, including balance on July 1, 1899.	Paid for teachers' salaries.	Paid for rents, repairs, fuel, and contingent expenses.	Paid for school libraries.	Paid for school apparatus.	Paid census marshals.
Apache	360	66	$8,621.69	$6,156.25	$1,205.94	$2.60	....	$82.00
Cochise	1,758	65	30,463.57	19,141.89	3,568.71	122.90	$774.34	244.50
Coconino	438	53	18,065.52	8,547.75	2,913.48	138.20	37.65	92.00
Gila	80	32	22,306.34	8,757.50	3,385.66	10.00	123.50	190.00
Graham	81	60	27,377.89	15,857.21	4,144.32	....	616.65	258.60
Maricopa	2,469	197	76,284.45	48,737.00	12,590.12	197.59	125.00	586.50
Mohave	412	35	9,091.01	5,482.50	2,874.65	....	....	....
Navajo	460	60	15,206.70	9,778.80	2,188.41	....	27.00	105.70
Pima	288	36	24,689.99	19,313.45	3,471.83	6.30	165.61	230.00
Pinal	263	29	9,116.45	6,252.02	1,399.45	....	382.50	173.99
Santa Cruz	251	28	9,210.55	7,195.68	1,364.97	....	214.00	162.00
Yavapai	945	128	35,203.91	27,169.00	5,045.99	....	587.48	....
Yuma	361	19	9,349.21	6,799.97	1,799.79	....	....	106.40
Total	8,161	808	294,987.28	189,189.02	45,953.32	477.59	3,053.73	2,231.69

County.	Paid for school furniture.	Total expenditures.	Balance on hand June 30, 1900.	Valuation of lots, buildings, and furniture.	Value of libraries.	Value of apparatus.	Total valuation of school property.
Apache	$111.10	$7,557.89	$1,063.80	$9,532.00	$400.00	$1,366.00	$11,298.00
Cochise	1,125.23	24,977.57	5,486.00	21,524.00	1,610.00	2,590.00	25,724.00
Coconino	995.30	12,724.38	5,341.14	29,525.00	300.00	520.00	30,345.00
Gila	2,109.90	14,576.56	7,729.78	25,000.00	80.00	210.00	25,290.00
Graham	400.33	21,277.11	6,100.78	31,796.00	90.00	2,364.00	34,250.00
Maricopa	852.82	63,089.03	13,195.42	184,065.00	1,222.00	4,900.00	190,187.00
Mohave	....	8,357.15	733.86	11,400.00	290.00	1,120.00	12,810.00
Navajo	....	12,099.91	3,106.79	14,080.00	128.00	1,717.00	15,925.00
Pima	173.49	23,360.68	1,329.81	88,870.00	320.00	1,088.00	90,278.00
Pinal	....	8,207.96	908.49	16,787.00	200.00	1,655.00	18,642.00
Santa Cruz	66.70	9,003.35	210.20	23,550.00	292.00	632.00	24,474.00
Yavapai	590.25	33,392.72	1,811.19	37,920.00	813.00	2,168.00	40,901.00
Yuma	52.00	8,758.16	591.05	8,200.00	500.00	200.00	8,900.00
Total	6,477.12	247,382.47	47,607.81	502,249.00	6,245.00	20,530.00	529,024.00

ANALYSIS OF THE STATISTICS.

A study of the comparative school statistics as given in the foregoing summary affords an intelligent understanding of the relative work and progress of the schools during the past two years. The showing is a very fair one, and indicates that the schools have made satisfactory advancement in all important respects since July 1, 1898.

POPULATION AND ATTENDANCE.

The number of children between the ages of 6 and 18 in the Territory on May 1, 1900, as reported by the census marshals, was 20,833, which is an increase of 1,010 over the number reported for the previous year, and a gain of 2,031 in school population since 1898, the date of the last report from this office. Of this number, 16,504 attended the public schools some time during the year ending June 30, 1900, showing an increase in the enrollment over the preceding year of 611, and for the past two years of 1,791. In addition to the enrollment in the public schools, the returns show that in 1900 463 pupils attended private schools and 749 denominational schools. This places the total number of children attending school during the year at 17,716.

From the above it appears that of the 20,833 children of school age in the Territory at the close of the last school year, 79 per cent were enrolled in the public schools; 1,212, or about 6 per cent, in private and denominational schools, and the remainder, 3,117, failed to attend any school.

The average daily attendance on the schools for the past year was 10,177, as against 9,396 for the preceding year, and is a gain for the two years last past of 1,168 over the number reported for 1898.

While the number of names entered on the registers indicates the amount of material upon which the schools are working in a general way, the statistics of the average attendance furnish the exact measure of their daily labor. The returns in this latter regard are not so gratifying as in the case of the enrollment, yet when we take into consideration the prevalence of contagious diseases among the children in the most populous communities, resulting in the schools being closed for several weeks, as reported by the county superintendents, the showing in respect to regularity of attendance is fair, and indicative of improvement.

The statistics relating to both the enrollment and the daily attendance are certainly encouraging, as proving the existence of a more active and intelligent parental interest.

SCHOOL DISTRICTS AND SCHOOLS.

The increase in the attendance on the schools naturally created a demand for additional school facilities. This demand has been met by the organization of 13 additional school districts—4 in 1899 and 9 in 1900—and by the erection of 21 new buildings, 17 of which were built last year. While a few of the new buildings replaced worn-out structures, the greater portion of them have been built where none existed before. Nearly all of them are constructed on the latest improved plans, and are supplied with the best of modern furniture. Notable among the buildings constructed are the building at Nogales, costing $16,000; the one at Globe, erected at a cost of $19,925, and another at Mesa, at an expense of $10,000.

The sum of $54,588 is reported by the county treasurers and county superintendents as having been expended in the construction of schoolhouses during the past year, or an average of $3,210 for each building erected. This amount was raised in most instances by the sale of district bonds, as authorized by act No. 16 of the sixteenth legislative assembly, and in other cases by voting a district tax.

As the law permits all communities having 10 children of school age residing more than 2 miles from a schoolhouse to organize a school district, and as only 9 new districts were formed during the past year, it is evident that the smaller settlements have school facilities equal to those enjoyed by the more populous sections of the Territory.

Under an act of the legislature authorizing school districts to establish and maintain kindergarten schools, but one district, Prescott, has taken advantage of its provisions. The report of the school sent this office is statistical only, and will be found in the table of statistics relating to Yavapai County.

The number of schools in the primary grade which have become grammar schools by reason of the advancement of the pupils during the past year is 10, while the whole number of schools has increased from 347, as reported in 1898, to 399 in 1900.

In addition to the studies pursued in the grammar grades, 241 pupils are reported as classified in the advanced grades during last year. These grades were established by the board of education under authority of section 81 of the school law, and are intended to meet the needs of village and advanced country schools.

The only high school in the Territory organized under the act of the legislature entitled "An act to provide for the establishment and maintenance of high schools in the Territory of Arizona," is the Union High School located at Phoenix, in Maricopa County. The high-school district is composed of school districts Nos. 1, 2, 5, 7, 8, 14, 16, 21, 27, 30, 34, and 38 in said county. The school is supported by a special tax levied on the property in the district, and is managed by a board of education consisting of five elected members. The school was established in 1895, and is comfortably housed in a commodious building supplied with modern conveniences. The physical and chemical laboratories are well equipped, and the library is of creditable size and character, additions to which are made annually.

Three courses of study are provided: A Latin, an English, and a business course. The first two cover a period of four years, and the business course a period of three years. Pupils who have completed the grammar grades in the public schools are admitted to any one of the courses, and graduates in the Latin or in the English course are admitted into the Territorial university without examination.

The following is a statement of the classification of the pupils at the close of the past year:

Course.	First year.	Second year.	Third year.	Fourth year.
Latin	16	9	16	7
English	29	24	11	14
Business	4	4	2	....

The district-school library has not received the recognition it deserves as a factor in education. Without doubt the school with a good library has a decided advantage over the one without. The pupils not only acquire a taste and habit for reading at the proper age, but the information thus secured in a natural and pleasant way reduces their labors as they advance in the grades. The reports show that 2,014 books have been added during the past year, making a total of 8,160 books in all of the libraries of the Territory, with a valuation of only $6,245.

TEACHERS.

The statistics relating to the number of teachers employed show that while the number has increased to meet the requirements of the school service, the ratio of the number of male to female teachers was considerably lowered during the two years last past. The total number of women teachers employed in 1900 was 290, being a gain of 39 over the previous year, while the number of men was lowered from 122 to 109. This decrease in the number of male teachers has been taking place all over the country for the past ten years and amounts to 18 per cent for the whole United States. For this two reasons may be assigned: First, that the increase in the number of primary schools established each year calls for the employment of women teachers, and the other is that the number of women who are graduates of colleges is now so large that they are fast filling the vacancies in the higher grades of the public schools, and in high schools, for which, only a few years ago, men alone were available. Another reason may be assigned for the retiring of men from the teaching force in Arizona, and that is, they are able to secure more lucrative employment in other occupations.

The returns relating to the education of the teachers employed are full of encouragement. The number of teachers holding life or educational diplomas or first-grade certificates in 1900 was 277, of which number 85 are graduates of normal schools, while a large percentage of the remainder are graduates of colleges or universities. The number of second-grade teachers was 97, showing that 179 of the primary schools were instructed by teachers holding first-grade certificates.

The number of applicants for certificates who appeared before the various county boards for examination during the year ending June 30, 1900, was 165 as against 128 for the previous year. Of this number, 29 obtained first-grade and 64 second-grade certificates.

The average monthly salary of male teachers for 1900 was $76.90, being an increase of $2.20 over that paid in 1899. The wages of women teachers per month decreased from $64.44 in 1899 to $63.40 in 1900. These salaries appear large when compared with those paid in the Eastern States, but when it is borne in mind that the average time teachers are employed is only six and one-fourth months in each year, the compensation paid affords little more than a bare livelihood in Arizona.

So far as this office is advised, there is a spirit of harmony, good will, and hearty cooperation among the teachers in the public schools, in the normal school, and in the university, and between these different institutions. While this does not necessarily indicate a unanimous opinion on all school matters, it is a mark of a broader and more professional spirit on the part of the teachers and others engaged in educational work, which augurs well for the future.

RECEIPTS AND EXPENDITURES.

The total receipts for the year ending June 30, 1900, from all sources, including balances on hand at the beginning of the year, amount to the sum of $421,776.15.

Upon an examination of the several sources of receipts we find an increase in the amounts derived from property taxes and licenses, but a falling off in the receipts from the poll tax, during the past year, from the amount reported in 1899.

The rate of the Territorial school tax being fixed by law at 3 cents on each $100 valuation of property, the revenue from this source grows each year by reason of the increase of property values in the Territory. This increase in valuation will produce about $1,000 additional revenue for next year. The amounts derived from the leasing of the school lands, from escheated estates, etc., which form part of the Territorial school fund, can not be stated by this office, but will appear, no doubt, in the report of the treasurer.

The amount received from licenses, fines, etc., as reported by the county treasurers for the year 1900, was $48,849.46, being an increase of $11,079.80 over the sum reported for the previous year.

The falling off in the receipts from the poll tax of $2,144.66 is unaccountable except on the ground that collectors have not enforced the law. The result financially to the schools by the enactment of the poll-tax law by the last legislature, requiring every elector to produce a poll-tax receipt before he can be registered as a voter, can not be determined until after a general election has been held.

While the revenue for the support of the schools has slightly increased, such increase has not been sufficient to meet adequately the expense necessary for maintaining the twenty-two additional schools organized during the past year. The result is shown in a decrease of two in the number of days school was maintained. The responsibility for this rests with the boards of supervisors in not levying a higher rate of tax for school purposes.

The amount expended for teachers' salaries during 1900 was $189,189.02, being an increase of $11,074.90 over the sum so expended in 1899, and showing an average of $474.10 paid to each teacher employed.

Current expenses, such as cost of heating the schoolrooms, making repairs, etc., were $2,589.11 less than during the previous year, although there were seventeen additional buildings to be cared for.

The cost of taking the census amounts to about $3,000 yearly. A saving to the schools could be made if the enumeration were made biennially instead of annually, as at present.

The expenditure for apparatus during 1900 was $3,053.73, an increase of $664.49 over that spent for this purpose in 1899.

The amount expended for furniture since 1898 was $15,691.37, which includes the cost of furnishing several large buildings constructed within the last two years.

The cost of education per child is set forth in the general summary, and was ascertained by adding the amounts expended for teachers' salaries to the contingent expenses and dividing the sum by the number of children. A study of the statistics relating to this subject will repay those whose duty it is to provide for the school revenues, as the estimates are based on the school population, and the apportionments, after making allowance for the smaller districts, are made on the attendance.

SCHOOL PROPERTY AND BONDED DEBT.

The valuation of all property appropriated to the uses of the schools two years ago was $472,107.64; one year ago $480,504, and on June 30, 1900, it was estimated at $556,824. These valuations are probably approximations only, as the county superintendents in their reports state that it is very difficult to secure correct data, and in many instances to secure any information in this particular from the trustees of the districts. The correct valuation is probably 20 per cent greater than the amounts returned.

Under the law permitting school districts to raise money for building purposes by issuing bonds, there has been incurred an indebtedness of $228,537. The interest on the bonds is paid annually from the proceeds of a tax levied by the boards of supervisors on the property of the different districts. The bonded debt of each district is set forth in detail in the tabulation.

NORMAL SCHOOLS.

The normal-school idea has been developed well in Arizona. The lawmakers of the Territory have appreciated that to secure the best results in the schoolroom the teacher should serve an apprenticeship, as in the trades. Through this belief two normal schools have been established, one at Tempe and a later one at Flagstaff. The school at Tempe has been in successful operation since 1886; in the intervening period graduating about 150 young men and women, who have, with few exceptions, taken up the occupation of teaching. The Flagstaff school is now in its second year, with bright prospects for the term and future. Each of the schools offers exceptional advantages to the student. A choice of climates is afforded, for Tempe, 8 miles east of Phœnix, is in a warm semitropical valley, while Flagstaff is amidst the pines, under the snow-capped San Francisco peaks. The curriculum of both schools is the same, and the standard set for graduation is even higher than in many normals of high repute, both East and West. The course is three years in length, demanding qualifications for admission equivalent to passage from the freshman year of a good high school.

THE TERRITORIAL UNIVERSITY.

The University of Arizona is ably conducted and has achieved an excellent reputation, not only throughout Arizona, but in neighboring States. As a result there is an increased attendance of students each year. The following interesting information concerning the institution is taken from the report of the president:

The University of Arizona is located near Tucson, the county seat of Pima county, and one of the largest towns in the Territory.

Tucson is on the main line of the Southern Pacific Railway, 312 miles west of El Paso, Tex., and 500 miles east of Los Angeles, Cal. It is easily reached from east and west without change, and has railway connections with the central and northern portions of the Territory via Maricopa, and with the Northeastern States via Deming. The town lies in a broad, flat valley at an elevation of 2,400 feet above sea level, and is surrounded by mountains. Its dry, healthful situation, with its mild and equable climate, has made Tucson a famous health resort, particularly for pulmonary patients.

The winter climate is especially good. Its temperature is cool and strengthening without being severe. The lowest temperature recorded during the average year is about 20° F. above zero. But little rain falls during the winter; fogs are unknown, cloudy days are rare, the percentage of sunshine throughout the winter being greater than that recorded at any other place in the United States. Owing to the extreme dryness of the air the highest temperatures known are less oppressive to the senses and less dangerous to the health than the summer heat of the upper Mississippi Valley States.

The total amount of rainfall averages less than 12 inches. Of this amount fully one-half falls during July and August; yet the amount is so small as not materially to increase the atmospheric humidity, and the summers are found to be remarkably healthy. In general, the climate may be described as well suited to nearly all people, but is particularly beneficial to the young and to those who can not endure with comfort or safety the extremes of temperature and the sudden changes of northern climates.

The university was established by an act of the thirteenth legislative assembly of the Territory during the biennial session at Prescott in 1885. The bill was introduced into the council by C. C. Stephens, of Tucson, carried through the house by the able efforts of S. M. Franklin, and approved by the governor March 12, 1885.

A tract embracing 40 acres of land lying just outside the city limits was selected as a site and was donated by the citizens of Tucson. A contract for erecting the main building was let in October, 1887, but owing to financial delays the building was not opened to students until October 1, 1891. The site selected is upon high ground about a mile from the business center of the city. On every side it commands a view of mountain scenery of remarkable extent and grandeur. The location can not be surpassed for healthfulness. The university possesses its own water system. The supply is drawn from a well on the premises 100 feet deep, and is of unusually good quality.

BUILDINGS.

The main building is 200 by 105 feet, 2 stories in height, the lower story of gray stone, the upper of red brick, and is completely surrounded by a wide 2-story veranda. This building contains the offices, recitation rooms, laboratories, and apparatus rooms of the various departments; an assembly room; the libraries of the university and experiment station, and the Territorial museum. Adjoining the main building is the mining annex, 80 by 60 feet, filled with metallurgical machinery.

Three brick houses, 2 stories in height, are occupied as homes by instructors and the president.

A dormitory, built of a fine quality of gray stone, 2 stories in height, originally provided as a home for male students, has been refitted for the use of the young women. It contains a students' dining room, kitchen connected therewith, 16 rooms, each large enough to accommodate 2 students, and a reception room.

A fine brick dormitory of imposing architecture, containing 40 rooms, with bath and toilet rooms, has been built this year for the use of the male students and teachers.

A substantial brick building contains a suite of rooms for the use of the assaying department, and also a carpenter shop. The assay rooms contain a large smelting furnace with necessary muffle furnaces and other accessories, while the carpenter shop has an engine for power work, with lathes and other machinery for convenient operation.

Other buildings are the boiler house, which also contains the well and pumps whereby the water supply for irrigation and general purposes is obtained; the new greenhouse, 80 by 21 feet, built wholly of glass; the old greenhouse, now used as a propagating house, also of glass; the cottage occupied by the classes in domestic science; and a temporary wooden building used for various purposes.

LIBRARY.

The library is a department of the university that is increasing in efficiency with the growth of the institution. The books have been selected with great care, with a view both to the requirements of the various departments of instruction and also to the building up of a well-balanced, symmetrical collection of books. All the books are new and standard. The scientific works represent the highest and latest authority, while the literary and historical works are the writings of the best-known and most thoroughly tried authors. A main object in making the selection has been to furnish students with books of the highest class, and to encourage them in habits of careful reading. Complete bound sets of the leading American periodicals, both literary and scientific, are being collected every year, so that the library is already valuable as a means of research in present-day problems.

The latest editions of the best cyclopedias and dictionaries are constantly at the students' disposal. The leading American scientific and literary publications, as well as the Territorial newspapers, are found in the reading room. The reading room and library are open to students for an average of eight hours each day.

The library contains about 5,000 volumes. Of the whole number about three-fifths are scientific works, the remaining belonging to general literature, biography, and history. A complete card catalogue of authors and titles is maintained.

THE TERRITORIAL MUSEUM.

The Arizona legislature, session 1893, passed an act establishing a general museum at the university. The object of this is to collect materials of all kinds illustrating the resources and development of Arizona, and particularly to preserve historical relics, including those pertaining to the aboriginal inhabitants.

Donations of specimens and collections will be received and acknowledged with thanks; but no provision has yet been made by the legislature for the support of this department, aside from the appropriation of $100 per annum for the salary of a curator for two years.

The collections now displayed at the university comprise representative series of the minerals, ores, and rocks of Arizona. Among these may be mentioned particularly superb specimens from the mines of the Copper Queen at Bisbee. There are also collections of typical rocks and minerals for comparison, and many specimens of ores from different parts of the United States and from abroad.

It is desired to make the collection of ores and minerals fully represent the great mineral resources of Arizona, and specimens from all of the mines will be thankfully received and duly acknowledged.

A large and valuable collection of skins of the birds of Arizona has been deposited by Mr. Herbert Brown, curator, in the museum. He has also contributed largely to the department of archæology, which already has a collection of ancient aboriginal pottery and other relics. Among other important additions to the museum the fossil skull and teeth of an elephant, sent from Yuma by Mr. Brown, deserve special mention.

Historical records of much value are gradually accumulating as a part of this museum, and an appeal is made to old settlers and others to bear this fact in mind when making disposition of articles bearing even remote relation to the early pioneers and their history. All records and data of any nature which can be gleaned are worthy of preservation, and we earnestly desire to have them placed at the university, where they will always be accessible for reference.

The professors at the university have the immediate care of the collections in their respective departments.

The museum has attained very considerable importance and value and should be housed in a special museum building, which it is hoped may be secured in the near future.

CHEMISTRY.

The chemical laboratories are two in number. The smaller one, on the upper floor of the main building, is for the use of students, and is equipped for teaching the theory and practice of chemical science. The room for laboratory work is well lighted, provided with gas, water, working desks, ventilating hoods, and abundance of apparatus and chemicals with which to carry on experimental work, and can be made to accommodate about 24 students. Adjoining the large room is a small storeroom stocked with apparatus for demonstrating the principles of chemistry and containing well-selected collections of chemical substances.

The experiment-station laboratory occupies three large working rooms and two small storerooms on the lower floor of the main building. This laboratory is devoted to analytical work and chemical investigations relating to the agricultural interests of the Territory. It is excellently equipped for the special lines of investigation in which it is engaged, and although not primarily intended for the use of students it has educational value to those who desire to witness the operations of a working laboratory. The equipment includes chemical balances, chemical apparatus and supplies, machinery for preparing samples, and special appliances for the analysis of milk, agricultural products, tanning materials, and soils.

BIOLOGY.

The biological laboratories occupy three rooms in the southwest half, second floor of the south wing of the main building. These rooms are piped for gas and water and liberally provided with apparatus for research and for giving instruction on biological subjects. Students pursuing histological work are provided without expense with simple and compound microscopes, as the nature of their work demands. The laboratory is equipped with microtomes, culture baths, oven, and other accessories used in modern methods of research.

An herbarium containing nearly 10,000 sheets of plants, mostly indigenous to the Southwest, a large percentage being from Arizona, is an important factor in the equipment. Some 50 cases of insects, including one large cabinet, are of value in giving instruction in entomology and to illustrate the economic insects of Arizona. The work in general and systematic zoology is greatly facilitated by the Herbert Brown collection of birds, and by other zoological material which has been brought together during the past five years.

To aid in the study of human and comparative anatomy and physiology there are provided articulate and disarticulate human skeletons, plaster and papier-maché models of the important organs, and microscopical preparations illustrating the structure of the various tissues. The equipment also includes special apparatus for use of advanced students in the department.

AGRICULTURE AND HORTICULTURE.

Two rooms upon the first floor and near the central part of the main building are used for the work in the study of agriculture and horticulture, and for the agricultural experiment station headquarters. The equipment is fairly complete. There have been imported from Europe several of the best Azoux models of portions of the domestic animals, showing normal and morbid conditions; also several cases of products of the vegetable kingdom. A very large collection of garden and farm seeds has been secured and arranged in jars and properly labeled. There is also a selection of garden tools, and instruments used in veterinary surgery. Recently there has been imported from Germany a collection of charts illustrating the anatomy and physiology of some of the fruits and grains. Specimens of the best fruits, grains, and other farm products are constantly received for examination; also specimens of an abnormal nature.

The old greenhouse, about 14 by 20 feet in area, is used as a propagating house, and a new one has just been built 21 by 80 feet in size, constructed of glass throughout. Laboratory work is provided for in these greenhouses and in field work upon the university grounds. The general library contains many of the most valuable of the recent publications upon agriculture in its various branches and the science upon which it is based. All the bulletins and reports of the experiment stations of the United States and foreign countries are on file in the station library, and the principal agricultural and horticultural journals are upon the table of the reading room.

ENGINEERING.

In a partly developed Territory like our own the engineer is called upon for the solution of a great variety of problems in the various lines of civil, hydraulic, mechanical, and mining engineering, and in many inaccessible situations he must depend upon his knowledge and inventive ingenuity to supplement a meager equipment. To prepare the engineering student for such experiences the apparatus in this department has been chosen with a view to giving him the greatest familiarity with the theory, construction, and use of those instruments and machines which experience has shown to be of universal adoption in practical engineering work. Already liberal, it is constantly being enlarged. It embraces surveyors' and engineers' chains, standard field and pocket tapes, plain and solar compasses and transits, engineers' levels, stadia, level, and transit rods, aneroid barometers, odometers, pedometers, automatic water registers, hook gauges, three forms of current meters, stop watch, meteorological instruments, drafting instruments, mechanical calculators, blue-print apparatus, a 4½-inch astronomical telescope, with equatorial mountings and accessories; celestial sphere, a 75-light Mather dynamo, a Westinghouse high-speed engine, pumps, steam gauges, indicators, calorimeters, etc.

MINING AND METALLURGY.

Attached to the main building is an annex or mill containing machinery and appliances for crushing, sampling, concentrating, amalgamating, leaching, chloriding, cyaniding, and the electrical treatment of various kinds of ore in large or small lots. Power is furnished from a 70-horsepower boiler, detached from the main building, the steam being carried under ground to the engine room, which contains a 35-horsepower engine, built by the Walburn-Swenson Manufacturing Company of Fort Scott, Kans., and a 16-horsepower Westinghouse automatic engine, the latter being used for running the dynamo.

The mill building has a storage capacity for ore of 50 to 100 tons. From the bins the ore passes to the crushing floor above. A 7 by 10 inch Blake crusher is used for coarse crushing and a Dodge crusher for finer work. Beneath the Blake crusher is a set of 14 by 20 inch Cornish rolls, from which the ore passes by a conveyer to the main elevator, which carries it up 31 feet to the top of the mill. By means of slides and chutes the crushed ore may be sent at will to various machines to be tested by different methods. For concentration there are provided revolving sizing screens giving facilities for preparing six sizes, besides hydraulic separators for classifying slimes into three grades. The coarser sizes may be worked upon full-sized jigging machines of the Hartz pattern, the finer sizes being jigged upon bottom-discharge machines, and the slime worked upon a double Rittinger percussion table, or otherwise as desired. A small apparatus, run by an electric motor, is also provided for dry concentration. Amalgamation tests may be made upon a working scale by different methods, including plates and riffles, pans and settlers, etc. A 5-stamp gold mill with silvered plates and aprons of the latest and most approved construction, by Fraser & Chalmers, of Chicago, permits the working of free-milling gold ores by the usual methods and on a large scale. Several lots of ore have been successfully worked and returns made in gold bullion, thus familiarizing the mining students with all the details of feeding, stamping, amalgamating, cleaning up, retorting, smelting, and assaying. In addition to the 5-stamp mill a smaller prospecting mill of 3 stamps has been added so as to work small lots of ore of from 100 to 500 pounds. A sampling mill permits of rapid crushing and mixing large samples preparatory to assaying.

The assay laboratory is equipped with assay furnaces for crucible work, for scorifying and cupeling, and for retorting mercury from amalgam. An adjoining room, supplied with water, gas, and electric current, has a roomy hood for work involving fumes, with tables and desks for student work, besides all needed appliances for assaying by dry and wet methods, including electrolysis. The laboratory also has desks and fittings for the chemical work required in the metallurgical and mineralogical inevstigation and analysis of ores, mineral fertilizers, and qualitative tests of minerals.

PHYSICS.

Three large rooms in the basement of the main building are set apart for the teaching of physics. The facilities for experimental demonstration of all important phenomena are very complete. The lecture room is fitted with shutters, so that it can be darkened. A beam of sunlight, directed by a fine clock heliostat outside, may be thrown steadily across the lecture table for experiments on light, or used in connection with the solar lantern for a variety of other work. The lecture table is supplied with gas, water, and electric currents from primary and storage batteries and from the large dynamo.

Adjacent to the lecture room are the physical laboratory and the apparatus room, in which are kept the many instruments owned by the university, among which may be mentioned an Atwood's machine, Kater's pendulum, whirling table, many balances, barometers, an air pump and accessories, a hand dynamo, motors, six storage cells, a large number of primary batteries, induction coils, Deprez-D'Arsonval tangent and sine galvanometers, rheostats, Wheatstone's bridges, a fine testing set, a Wimshurst electric machine, Leyden jars, Geissler's and Crooke's tubes; diapasons; a sonometer; lenses, prisms, and mirrors of all kinds; a polariscope, steam gauges, indicators, calorimeters, and a full equipment of simple pieces of apparatus for the use of elementary classes.

MANUAL TRAINING.

The small brick building described on a previous page contains rooms devoted to woodworking and drawing. These rooms are equipped with tools and machinery for classes in carpentry, joinery, wood turning, and cabinet work.

Forge, pattern, and machine shops will be erected during the present year. Rooms have been equipped in the small cottage for instruction in domestic science.

REQUIREMENTS FOR ADMISSION, ETC.

Applicants for admission to any department of the university will be required to furnish satisfactory evidence of good moral character and of honorable dismissal from the schools with which they were last connected.

For admission to the freshman class, applicants must be at least 16 years of age and must pass satisfactory examinations in subjects sufficient to give 12 credits, as described below. One study pursued satisfactorily for one year, one period a day, as ordinarily taught in high schools, entitles a student to one credit. The subjects upon which examinations must be passed and the credits assigned, are—

Mathematics, including arithmetic, algebra, and plane geometry, three credits.

English, two credits.

History and civics, one credit.

Elementary science, one credit.

Latin, German, French, Spanish, drawing, manual training, or advanced science, five credits.

The scope of work required in the various subjects is indicated below.

Mathematics: Arithmetic, entire, including the metric system; algebra, through quadratic equations, including factoring, the greatest common divisor, and the least common multiple, as treated by Wentworth or Wells; geometry, all of plane, Wentworth or Wells.

English: A competent knowledge of the elements of English grammar, composition, the elements of rhetoric, and the following English classics or acceptable equivalents: Longfellow's Evangeline, Irving's Sketch Book, Scott's Ivanhoe and Lady of the Lake, Whittier's Snow-Bound, Shakespeare's Julius Cæsar and Merchant of Venice, George Eliot's Silas Marner.

History: Ancient, mediæval, and modern. The text-book in use in the subcollegiate department is Adams's European History. United States history, science of government as contained in Fiske's Civil Government in the United States.

Elementary science: Geography, political and physical, as included in The Natural Advanced Geography; physics, as much as is contained in Gage's Elements of Physics. Notebooks covering such laboratory work as has been performed by the student should be presented for examination.

Latin, French, German, or Spanish: If any language is offered, it must be to the extent of two credits, as a single year's study of a language is not considered to have sufficient educational value to be entitled to credit.

Drawing and shopwork: The general character of this requirement is previously indicated, as the student seeking credits in this department must be prepared for drawing 1 and 2 and shopwork 1 and 2.

Advanced science: Two years' creditable work in biological science, or chemistry, or physics, at least one-half of which has been laboratory work, the quality and scope of which must be shown by the original laboratory notebooks.

Students from other institutions of equivalent rank may be admitted to the higher classes upon the presentation of properly authenticated certificates, showing clearly to the satisfaction of the faculty that they are qualified to proceed with such work.

Arrangements have been made with the Arizona Normal School, at Tempe, whereby students from that institution may have their record transferred to the books of the university with full credit, upon presentation of a certificate duly signed by the principal. Students of this university may also obtain the equivalent privilege at the normal school by presenting the proper certificate of standing signed by the president.

The faculty desires to establish such relations with high schools and other educational institutions as will enable it to accept their certificates without question. To this end presiding officers are respectfully requested to correspond with the president.

REGISTRATION OF STUDENTS.

All students are required to register on registration day at the beginning of the year in the president's office. A matriculation fee of $5 is required of all students. Each will receive a card indicating the classes which he or she is to attend, and a receipt for the matriculation fee, when paid. No class card will be issued until all dues are paid. No change in registration can be made without proper authority.

RECORDS.

The class standing of each student is determined by the instructor in charge. The method of ascertaining the student's record is left to the instructor, and his report in all cases is final.

Reports of standing in classes are regularly sent each month to parents and guardians from the president's office. Those to whom these reports are addressed are urgently requested to examine each with care and to spur up delinquent students or commend those who are diligent, as the case may be. Without such hearty cooperation good results can not be anticipated.

FACULTY MEETINGS.

Regular meetings of the faculty are held weekly.

Students' individual petitions must be in the hands of the president before the hour of faculty meeting in order to receive attention the same week. Petition from classes or from any two or more students will not be acted upon by the faculty unless presented in writing to the president at least two days before the meeting at which action is desired.

DISCIPLINE.

It is understood that students enter the institution with serious purposes and that they will cheerfully conform to such regulations as may be made by the faculty. It is the aim of the faculty to maintain a high standing of integrity and a strict regard for truth. Any attempt on the part of the student to present as his own the work of another or to pass any test or examination by unfair means is considered a most serious offense. Any conduct harmful to the moral standing of the school will, after due admonition, render a student liable to dismissal.

PRIZES.

Two prizes were awarded on commencement day, 1899, as follows: A gold medal, offered by Mr. Hugo Zeckendorf, of Tucson, for the best essay on an assigned economic subject, was awarded to Robert Lee Morton.

A gold medal, also offered by Mr. Zeckendorf for the student of the junior class having the highest average standing, was awarded to Charles Pierce Richmond.

A gold medal, offered by Mariner's Juvenile Band to the best-drilled cadet, was awarded to Thomas Trevillian in May, 1900.

VACATIONS AND HOLIDAYS.

Short vacations are taken at Christmas and Easter. The long summer vacation begins about June 1 and continues until near the close of September.

All legal holidays are observed by the cessation of ordinary university work, and the Thanksgiving recess extends from the close of regular exercises on the preceding Wednesday until the Monday morning following.

Appropriate exercises may be arranged by the faculty for any of the legal holidays, in which the students will be expected to join, if required.

Arbor Day has been formally adopted by the university faculty as the regular anniversary, on which shall be celebrated the founding of the institution, in connection with the ceremonies of tree planting.

LIVING ACCOMMODATIONS AND EXPENSES.

Provision is made as far as possible for furnishing board and rooms for students of both sexes upon the university grounds. Young men have excellent quarters in the new dormitory building. A separate home for young ladies is in charge of an experienced and capable preceptress, who has constant supervision of those rooming in "ladies' hall."

There is no charge for tuition in the university. All students are required to pay once only (upon entrance) a matriculation fee of $5. Charges will be made for material actually consumed by students in the laboratories and shops. Such charges will average $5 per term.

Board and room rent will cost from $15 to $18 per month; charges for fuel and lights will be made to cover cost. By resolution of the board of regents of the university, board is to be paid in advance at the beginning of each month. Checks, post-office or express money orders should be made payable to the president. No reduction will be made for absence for a period less than one week.

Students will be provided with simple furniture, including single bedstead, table, mirror, washbowl, pitcher, and slop jar. They will supply their own lamp, mattress, pillow, bed clothing, towels, napkins, etc. They will care for their own rooms, under the direction of the person in charge.

Text-books required are obtained direct from the publishers through a book association managed on the cooperative plan under the direction of the faculty, and may vary in cost to a student between $5 and $10 in different years of the course.

Economical students should readily go through the year with $150 to $200, excluding clothing.

Members of the battalion will be required to provide themselves with the prescribed uniform. The cost of uniform, with cap, and including transportation charges, will be $16.25. This uniform, has shown better wearing qualities than a civilian suit of equal cost, and parents are urged to consider the matter of uniform when supplying their sons with clothing for the approaching school year. It may be worn on all occasions, and thus will remove the necessity for the usual expenditures for outer clothing other than overcoats.

Provision has been made for the self-support of students to a limited extent.

LITERARY SOCIETIES.

The Philomathean Society, an organization of students open to all, holds its meetings in the assembly room of the university. Its work embraces general literary exercises and parliamentary usage, and is a valuable adjunct to the regular college course.

The Lescha, a secret society of limited membership, open only to students of college grade, conducts regular meetings at the university. Its purpose is to promote the literary taste and attainments of its members by rigid and serious work, special attention being paid to the art of debating, as also to gaining familiarity with parliamentary usages by constant practice.

ATHLETICS.

Encouragement is given to athletics, and athletic organizations are under the immediate care of a committee of the faculty. Membership in these organizations is subject to forfeiture for failure in regular line of school work.

MILITARY TRAINING.

Appreciating the importance of military drill as a physical exercise and as an aid to discipline, and in compliance with law, provision has been made for a course in military science and tactics.

Military drill is required of all male students throughout the preparatory course and as far as the end of the sophomore year, unless excused by the faculty for sufficient cause, and is optional through the remaining years. Students claiming exemption from drill by reason of physical disability will be required to secure from a physician designated by the faculty a certificate of incapacity, except when the debility is apparent. In general, the officers and noncommissioned officers will be chosen from the higher classes, scholarship as well as proficiency in drill being considered in making promotions.

Each member of the military organization will be required to provide himself with the prescribed uniform within six weeks after his entrance. The uniform consists of cap, coat, and trousers of cadet-gray cloth trimmed with black braid, and closely resembles the undress uniform of the United States Military Academy at West Point. White cotton gloves are also required. A committee of the faculty will protect the interests of students by inspecting all uniforms as received from the makers, in order to secure good materials and workmanship at a minimum cost.

An equivalent of the time occupied in military drill will be devoted by female students to physical culture, vocal culture, and instruction in the rudiments of hospital practice and prompt relief of the injured.

COURSES OF INSTRUCTION.

The facilities and privileges of the university are open to all qualified persons of either sex without extra charge.

Three regular four-year courses of study leading to a degree are offered, viz: Literary and scientific, engineering and mining, agriculture. In each course the work is partly required and partly elective, as shown in schedules later. Four hours of recitation a day are required in each course as full work. In laboratory work two to two and one-half hours are considered the equivalent of one recitation hour.

Persons of mature age and with sufficient preparation who are not candidates for a degree will in some cases be admitted to regular classes as special students without having taken the required work of the lower years of the course; provided, however, that in all such cases they show to the satisfaction of the instructor giving the course that they can take the work with profit to themselves and without detriment to the work of the regular class.

Work is offered in the following lines: English language and literature, Latin, Spanish, French, German, history and civics, mathematics, physics, chemistry, biology, mineralogy and geology, drawing and shopwork, engineering, mining.

The scope and nature of the various courses are shown in detail later. The subject of rhetoricals is not mentioned elsewhere, but the appearance once during each term in public rhetorical exercises, suited to their position in the course, is required of all students taking courses leading to a degree and of students taking English or elocution, unless excused by vote of the faculty.

Classes may not be formed unless a suitable number of persons apply.

Students who have completed satisfactorily the required work and the specified amount of elective work in either of the four-year courses will be given the degree of bachelor of science.

Each candidate for graduation is required to present an acceptable thesis embodying the results of a special study of some subject within the range of the course pursued. The subject of the thesis must be submitted for the approval of the faculty not later than the opening of the second semester of the senior year, and the completed thesis must be presented not later than three weeks before commencement day.

The advanced degrees of master of science and master of arts are conferred upon bachelors, graduates from this university or from institutions of equivalent grade, who have successfully pursued a course of study marked out by the faculty and requiring not less than one year.

COURSES OF STUDY 1900–1901.

Freshman year.—Literary and scientific: Required—English 1, 2. Elective—Mathematics 1, 2; Latin 1, 2; French 1, 2; German 1, 2; history 1, 2; Spanish 1, 2; drawing 1, 2. Engineering and mining: Required—English 1, 2; mathematics 1, 2; shopwork 1, 2. Elective—Latin 1, 2; French 1, 2; German 1, 2; Spanish 1, 2; history 1, 2.

Sophomore year.—Literary and scientific: Required—English 3, 4. Elective—Mathematics 3, 4; Latin 3, 4; French 3, 4; German 3, 4; Spanish 3, 4; chemistry 1; chemistry 2 or botany 1; history 3, 4. Engineering and mining: Required—Mathematics 3, 4; surveying 1, 2. Elective—Chemistry 1, 2; Latin 3, 4; French 3, 4; German 3, 4; Spanish 3, 4; drawing 3, 4; history 3, 4.

Junior year.—Literary and scientific: Elective—English 5, 6; mathematics 5, 6; political economy 1, 2; anatomy and physiology 1; zoology 1; mineralogy 1, 2. Engineering and mining: Required—Mathematics 5, 6. Elective—Mineralogy, assaying 1, 2; chemistry 3, 4; political economy 1, 2; drawing 5, 6.

Senior year.—Literary and scientific: Elective—Psychology 1, history of education and pedagogy 1; geology 1; astronomy 1; logic 1; ethics 1; and other electives not previously taken. Engineering and mining: Required—Physics and mechanics 1, 2; geology 1; astronomy 1. Elective—Metallurgical chemistry 1, 2; steam, hydraulic, and electrical machinery 1, 2; and other electives not previously taken.

TABULAR VIEW.

The following list comprises both required and elective subjects, arranged by semesters (half years) and periods of recitation. Unless otherwise stated, five recitations per week are required in each subject. The Arabic numerals refer to courses as outlined elsewhere. Subjects to which a * is prefixed were taught in 1899–1900 and will be taught each alternate year thereafter. Those to which a † is prefixed will be taught in 1900–1901 and each alternate year thereafter. Those not thus designated are taught each year. Students are required to make such choice as will avoid conflict.

Period I.—First half year: English 1, * French 3, † German 3, mathematics 5, * psychology 1, Spanish 3. Second half year: English 2, * French 4, † German 4, * history of education 1, mathematics 6, Spanish 4.

Period II.—First half year: Drawing 1, Monday, Wednesday, Friday; elocution 1, Tuesday, Thursday; English 3; †economics 1; history 3; steam, hydraulic, and electrical machinery. Second half year: Drawing 2, Monday, Wednesday, Friday; elocution 2, Tuesday, Thursday; English 4; †economics 2; history 4; steam, hydraulic, and electrical machinery.

Period III.—First half year: Drawing 3; drawing 5; elocution 3, Thursday; English 5; *logic 1; history 1; mathematics 1. Second half year: Drawing 4; drawing 6; elocution 4, Thursday; English 6; *ethics 1; history 2; mathematics 2.

Period IV.—First half year: Astronomy 1; drawing 3; drawing 5; † French 1; *German 1; mathematics 3; Spanish 1. Second half year: Drawing 4; drawing 6; † French 2; geology 1; *German 2; mathematics 4; Spanish 2.

Period V.—First half year: Anatomy and physiology 1; chemistry 1, Tuesday, Thursday; chemistry 3, Monday, Wednesday, Friday; Latin 1; Latin 3; metallurgical chemistry 1, Monday, Wednesday, Friday; mineralogy and assaying 1, Tuesday, Thursday; physics and mechanics 1; †surveying 1, Monday, Wednesday, Friday. Second half year: Botany 1; chemistry 2, Tuesday, Thursday; chemistry 4, Monday, Wednesday, Friday; Latin 2; Latin 4; metallurgical chemistry 2, Monday, Wednesday, Friday; mineralogy and assaying 2, Tuesday, Thursday; physics and mechanics 2; †surveying 2, Monday, Wednesday, Friday; zoology 1.

Periods VI and VII.—First half year: Anatomy and physiology, 1; chemistry 1, Tuesday, Wednesday, Thursday; chemistry, 3, Monday, Friday; metallurgical chemistry, 1, Monday, Friday; mineralogy and assaying, 1, Tuesday, Wednesday, Thursday; physics and mechanics, 1; shopwork, 1; surveying, 1, Monday, Friday. Second half year: Botany, 1; chemistry, 2, Tuesday, Wednesday, Thursday; chemistry, 4, Monday, Friday; metallurgical chemistry, 2, Monday, Friday; mineralogy and assaying 2, Tuesday, Wednesday, Thursday; physics and mechanics 2; shopwork 2; †surveying 2, Monday Friday; zoology, 1.

EXPLANATION OF COURSES OF STUDY.

English (Professor Hall and Miss Plimpton).—The object of the work in English is, first, to promote a taste for literature as a means of pleasure and of culture, and, secondly, by means of the study of eminent authors to cultivate a correct standard of literary judgment and taste. With these objects in view the method of work is intensive rather than extensive. A few authors are chosen for careful study, and sufficient time is spent upon these to acquire accurate ideas of their individual merits and style.

In that part of the work devoted to composition the aim is to teach a direct, vigorous style as the outgrowth of clear-cut, accurate thought.

English 1, 2, I; literature; nineteenth century prose. Freshman year. A few of the leading prose writers of the nineteenth century are studied, chiefly as a basis for appreciative, sympathetic criticism. The following authors and works will occupy the greater part of the time: Macaulay, select essays; Carlyle, Heroes and Hero Worship; De Quincey, Confessions. Minto's Manual of English Prose is used as a guide.

English 3, 4, II; rhetoric and composition. Sophomore year. Genung's Practical Rhetoric and Rhetorical Analysis and Baker's Specimens of Argumentation (modern) are used as text-books. One-third of the time is devoted to composition, chiefly expository and argumentative, briefs and finished papers being required once a week of each student at that stage of the work.

English 5, 6, III; literature. Junior year. Shakespeare, at least five plays; Milton, minor poems and Paradise Lost; Wordsworth, Keats, Shelley, and Tennyson are studied as extensively as time will allow.

Latin (Miss Foucar).—The aim of the work in Latin will be to produce in the student the ability to read the original with an appreciation of its meaning and beauty without conscious translation into the vernacular. Incidentally and of no less value, it is expected that his power of observation, mental ability, and knowledge of the use of English will be greatly strengthened. The instruction throughout the course will be shaped with the above ends in view. The laboratory method will be used in part, giving to each pupil the opportunity of doing as much work as his strength and knowledge of the subject will allow.

Subcollegiate.—Latin A; first year. Special attention will be given to vocabularies; an accurate knowledge of all inflectional forms will be insisted upon, and the student will be led to investigate and discover the underlying laws and principles on which these are based. Attention will be paid to the Latin sentence structure, and in translation from Latin into English idiomatic English will be insisted upon, while in translation from English into Latin attention will be called to the English grammatical structure and its comparison with the Latin. In the latter part of the year easy Latin, like Viri Romae, will be read. Text-book: Collar's First Latin Book.

Latin B; second year. An introduction to the study of Roman literature. Selections from Cæsar, the Lives of Nepos, and similar Latin will be read, with much sight reading. The text will be studied critically with translation into idiomatic English. Prose composition will be continued throughout the year with incidental study of history and geography. Text-books: Allen and Greenough's Grammar and texts; Daniell's or Bennett's Prose Composition.

Collegiate.—Latin 1, 2, V; third year. Cicero's Orations and Virgil's Æneid will be read. While the same principles will govern the work as in the second year, more attention will be paid to sight reading and to the reading of the original with an appreciation of its meaning in the same way that English is read. In connection with the reading of Cicero a thorough study will be made of the Roman system of government and the customs and occupations of the people. In connection with the Æneid a similar study will be made of Latin poetry and the scansion of the hexameter, also of the religious rites and beliefs of the ancients, together with the principal mythological characters. Throughout the course attention will be paid to word study and English derivatives of Latin words.

Latin 3, 4, V; fourth year. The work will consist of selections from Livy, Book XXI, Cicero De Senectute and De Amicitia, Horace, Odes and Satires, with sight reading. The student will be taught to appreciate the selections read as literature. Careful attention will be given to syntax and idiom, but the aim will be facility in reading. The contemporary literature will also be studied.

French and German (Miss Foucar).—The work in the modern languages will in general have the same end in view as that in Latin, and will be made an exact equivalent for the work in Latin as far as possible.

French 1, 2, German 1, 2, IV; first year. Careful attention will be given to fixing correct habits of pronunciation, together with thorough drill in forms and syntax. Constant attention will be paid to translation at sight and at hearing, and to some extent to conversation. Text-books: French, Whitney's French Grammar, Super's French Reader, Heath's Texts; German, Collar's Shorter Eysenbach, Joynes-Meissner's German Grammar, Harris's German Composition, Heath's Texts.

Second year; French 3, 4, I. Standard prose will be read, selections being taken from Dumas, Hugo, and Moliere, together with sight translations and composition. As far as possible French will be made the language of the class room. German 3, 4, I.—The same general plan will be followed. Standard prose and a play of Schiller will be read, German being the language of the class room.

History, civics, and philosophy (Professor Adams).—History 1, 2, III. Freshman year. History of England. Green's Short History will be made the basis of the work, but the laboratory method will be followed. Especial stress is laid upon the development of institutions and constitution, the relation of cause and effect, and the unity of history. Original sources will be consulted as far as possible. A thesis is required.

History 3, 4, II. Sophomore year. American history throughout the year. After a brief survey of the colonial period a detailed study is made of the formation of the Union and the political and constitutional history of the United States. Letters and speeches of American statesmen, public documents, and special histories will constitute the basis of the work. A thesis is required. Open to those who have taken History 1 and 2.

Economics 1, 2, II. Junior year. Political economy and civics. The historical method is used, and the subject, rather than any one writer's presentation of it, is treated. The instruction includes recitations, prescribed collateral reading, class room discussion of practical cases, and the subjects of banking, finance, and taxation are fully treated. Thesis and review exercises are required. Text-book: Walker's Advanced Political Economy.

Psychology 1, I. First semester. Lectures, recitations, and collateral reading, with special consideration of the subject as applied to teaching. Text-book: James's Briefer Course.

History of education; pedagogy 1, I. Second semester. This course will give an account of educational evolution both as a culture fact in the history of civilization and as a foundation for professional work. The lectures will give a brief but comprehensive outline of the school system of ancient, mediaeval, and modern countries, with a special study of leading educators, such as Socrates, Commenius, Pestalozzi, Froebel, Mann, etc. The course will also cover the present trend of pedagogical thought and practice and will include methods of teaching, school management, and school law. Upon the completion of this course graduates of the university will receive the Territorial teachers' certificate.

Logic. First semester. Jevon's is used as a text-book, with collateral reading from Mill, Hamilton, Thomson, and others.

Spanish (Mrs. Aguirre).—A thorough course of instruction in Spanish grammar and in reading, writing, and speaking the language.

Spanish 1, 2, IV. Freshman year. De Tornos's Combined Spanish method is used as the basis of the work. Much attention is given to writing and speaking Spanish. During the latter part of the year selections from Cartillas Historicas are read.

Spanish 3, 4, I. Sophomore year. The aim of this course will be to teach the student to read and speak the Spanish language with a fair degree of fluency. Much practice in composition and letter writing will be given and various selections from different authors read in class. Spanish will be the language of the class room.

Mathematics (Professor Woodward).—It is the aim of the work in mathematics to train the student to the habit of logical and vigorous courses of reasoning, to show the wonderful breadth of application of higher mathematics, to display the beauties and pleasures of the demonstrations, methods, and the results of higher geometry and calculus, and to give such practice in the use of these agents as will enable students who pursue the higher branches of engineering to use them naturally and easily in those multitudinous applications where they are indispensable. The courses in mathematics depend upon each other to such an extent that they can be taken only in the order in which they are printed.

Mathematics 1, 2, III; solid geometry. One-third freshman year. Text-book: Phillips and Fisher's Elements of Geometry.

Higher Algebra. Two-thirds freshman year. Text-book: Wentworth's College Algebra.

Mathematics 3, 4, IV; trigonometry. One-third sophomore year. Text-book: Well's Essentials of Trigonometry.

Analytic geometry. Two-thirds sophomore year. Text-book: Nichol's Analytic Geometry.

Mathematics 5, 6, I; calculus. Junior year. Lectures and recitations covering differential and integral calculus, with special reference to their use in the various branches of higher mathematics which are led up to and investigated by means of the calculus. Text-book: Hall's Differential and Integral Calculus.

Surveying 1, 2, V, VI, VII. Sophomore year. Recitations and field work, using the level, compass, and transit, covering the elements of land, topographical, railroad, and mine surveying. Text-book: Raymond's Plane Surveying.

Chemistry (Professor Guild).—The instruction in chemistry has two main objects in view—first, to promote general culture; and, second, to introduce students to technical work, especially in mining. The first year's work in general chemistry and qualitative analysis places the student in an advantageous position to take up the study of mining and metallurgy.

Chemistry 1, 2, V, VI, VII; general chemistry. First semester; sophomore year. The subject is introduced by a course of lectures and experiments by the instructor, and this is supplemented by recitations and laboratory practice. Emphasis is laid on the laboratory work, and special effort is made to secure its full value both as a source of information and as a means of training students in habits of careful observation and skillful manipulation. Text-book: Remsen's Briefer Course.

Qualitative analysis. Second semester; sophomore year. This subject is pursued with careful attention both to the principles of the science and its technical execution. At the end of the course a fairly bright student is expected to be able to determine the composition of any unknown substance submitted to him for examination. Text-book: Eliot and Storer's Qualitative Analysis, and various reference books.

Chemistry 3, 4, V, VI, VII; quantitative analysis. Junior year. This course has technical value in connection with the mining and metallurgical courses, besides training the student in habits of thorough and accurate work.

Physics and mechanics (Professor Woodward).—Physics and mechanics 1, 2. Senior year. Lectures, recitations, laboratory work, and drawing. A knowledge of calculus is necessary, hence this course must be preceded or accompanied by mathematics 5, 6.

It is the object of this course to familiarize the student with the fundamental principles that underlie the various applications of engineering science.

(*a*) Monday, Wednesday, and Friday, mechanics of solids; statics, and dynamics; graphic statics as applied to simple roof and bridge trusses with dead, moving, snow, and wind loads; kinematics of machinery.

Text-books: Hall & Bergen's Physics, Dana's Elementary Mechanics, Haskin's Graphic Statics, Jones's Machine Design.

(*b*) Tuesday and Thursday. Strength of materials; hydraulics; study of the steam engine. Text-books: Merriman's Mechanics of Materials, Merriman's Hydraulics, Kinealy's Steam Engine and Boilers; Trautwine's Civil Engineer's Pocket Book.

It is expected that (*a*) will be given only every second year, hence juniors are allowed to take it during years in which it is given.

Biology (Professor Toumey and Dr. Tyler).—In addition to the elementary work provided in the subcollegiate course, as elsewhere stated, this department offers three lines of work, viz, botany, zoology, anatomy and physiology.

Botany 1, VI, VII. The preparation for the work in botany consists of the course in elementary biology given in the subcollegiate department, or its equivalent. The work is of elementary character, covering in a general way the histology, physiology, morphology, and systematic relationships of the more important types of plant life. The instruction is in the form of laboratory work, with occasional lectures covering the subjects under investigation. Bessey's Botany, advanced course, is used as a text-book, supplemented by the following as necessary reference books: Gray's Structural Botany, Sach's Physiology of Plants, Goebel's Outlines of Classification and Special Morphology. The botanical library contains the more important literature bearing upon the systematic botany of this region.

Zoology 1, VI, VII. In the course of zoology attention is given to the principles of classification, the structure and development, and the comparative anatomy of types of animal life. Considerable time is occupied in laboratory work, making dissections, and in microscopical study of animal histology. Orton's Comparative Zoology is the text-book in use.

Anatomy and physiology 1, VI, VII. One full course is given in human anatomy and physiology. That this subject may be represented in a creditable manner the laboratory is provided with articulate and disarticulate human skeletons, casts representing the vital organs, and numerous charts. Martin's Human Body, advanced course, is used as a text-book, the daily recitations being supplemented by lectures and laboratory investigations.

In addition to the courses as given above, this department offers facilities for more advanced work or original research in botany to those qualified to pursue the same.

Mineralogy and assaying (Professor Guild).—Mineralogy and assaying 1, 2, V, VI, VII. Senior year. A year's course of lectures, recitations, and laboratory work, covering (1) crystallography, (2) blowpipe analysis and determinative mineralogy, and (3) fire assaying. At the end of the course the student is expected to know at sight all the common ores and minerals and to be able to determine and classify, by the use of the blowpipe and a few simple reagents, any less common mineral he may meet. A study is also made of the occurrence, uses, and distinctive characters of the most important minerals.

Metallurgical chemistry 1, 2, V, VI, VII. Senior year. This work is intended to fit the student accurately to make determinations of gold, silver, and lead in bullion, ores, and furnace products, by the furnace method, and to become familiar with the standard methods used in this country for the determination of all the metals of economic metallurgical importance. The course also includes instruction in the complete analysis of alloys, ores, slags, mattes, etc. The text-books required are Fresenius's Quantitative Analysis or some similar standard work, and Furman's Manual of Practical Assaying.

Geology and mining (Professor Blake).—Geology 1, 2, IV. Senior year. Lectures and recitations, with laboratory and field work when possible, supplemented and illustrated by the large collections of rocks, ores, and minerals in the museum.

The course covers the subjects of physiographic geology, structural geology, dynamical geology, and historical geology.

Economic geology: Special attention is given to the economic application of the science; to the structure and origin of mineral deposits and the distribution of mineral wealth.

Mining: In connection with or following the course in geology attention is given to the art of mining and to the treatment of ores by smelting, leaching, or milling.

Mining machinery: A course of lectures to advanced students in the mining course covers the subjects of drilling, hoisting, transporting, pumping, ventilation, crushing ores, concentrating and shipping ores.

Drawing[1] *and shopwork* (Professor Holmes).—Drawing 1, 2, II. Plain lettering, free-hand sketching, use of instruments, orthographic projection, working drawings of construction in carpentry and joinery, tracing and blue printing.

---

[1] A three years' course is provided in drawing.

Drawing 3, 4, III, IV. Ornamental lettering and design of titles, intersection of solids and development of surfaces, shades and shadows, map drawing, the technic of mechanical drafting. Open to all who have taken drawing 1, 2.

Drawing 5, 6, III, IV. Machine design. Open to all who have taken drawing 3, 4.

Shopwork 1, 2, VI, VII. The purpose of the shopwork is to furnish the student a knowledge of the principles involved in wood and metal manufactures. It is the aim to make the shops particularly useful to the mining course. The student learns by experiment the necessity of all the details of the modern shop. All work is executed from drawings, and, as far as possible, the conduct of the shop conforms to the most approved shop practice of the day. Two courses in shopwork are provided—bench work in wood and forge work.

AGRICULTURAL COURSE.

Freshman year.—English, solid geometry, trigonometry, higher algebra, modern language, shopwork, and drawing.

Sophomore year.—Higher algebra, analytic geometry, meteorology, chemistry, surveying, botany, drawing, farm equipment, soils, and irrigation.

Junior year.—Farm crops, breeds of live stock, botany, anatomy, zoology, entomology, floriculture, landscape gardening, forestry, horticulture.

Senior year.—Stock breeding and feeding, dairying, veterinary medicine, geology, fruits and fruit culture, vegetables and vegetable culture.

SHORT COURSE OF INSTRUCTION IN ASSAYING.

In order to meet the needs of many young men who are desirous of learning the art of assaying the common ores and metals, and who are not able to give the time required in the full course of study for graduation and the degree of mining engineer, the board of regents has approved a short course of instruction in practical assaying, metallurgy, etc., to be given in the laboratories and mill.

This course commences with the first college term in each year and requires at least two years of time, but students are advised to take the full regular course in engineering and mining, if possible, since in two years they can not expect more than to make a beginning in these subjects.

REQUIREMENTS FOR ADMISSION.

Young men desiring to take this course are required to be at least 18 years of age, to have good health, and to have a sufficient knowledge of English, arithmetic, and elementary science. They must agree to observe the rules and regulations of the university.

Instruction is gratuitous, but each student is required to pay the regular entrance or matriculation fee of $5 and to pay the cost of materials, glassware, and apparatus used by him. For this purpose a deposit of $10 will be required each term in advance, and any balance will be refunded.

If for good reasons students are unable to enter at the commencement of the year, they may be received at a later date, upon passing a satisfactory examination upon the studies already passed over by the other students in the course.

Experience with special students in assaying during their stay in the university and observation of their careers after leaving the institution have shown the following course of study to accomplish fair results with bright students.

Although the right is reserved to require this course of study of those special students who are in full attendance, it may be varied according to the aptitudes or necessities of those concerned.

TWO YEARS' COURSE IN ASSAYING.

First year.—General chemistry (one and one-half terms); qualitative analysis (one and one-half terms); mathematics (three terms); English or Spanish (three terms); practical free-hand drawing and shopwork (three terms) or physics (three terms).

Second year.—Mineralogy and blowpipe analysis (two terms); fire assaying (one term); quantitative analysis (one term); wet assaying (two terms); mathematics (three terms); geology (two terms); economic geology (one term).

Text-books.—The following text-books and others are used: Chemistry, Remsen, Eliot and Storer, Fresenius, and others; assaying, Ricketts, Brown, Furman, Aaron; mineralogy, Dana, Brush's Determinative Mineralogy, Dana's How to Study Minerals; geology, Dana, LeConte, Geikie.

SUBCOLLEGIATE DEPARTMENT.

Instructors.—Millard Mayhew Parker, A. M., president; Howard Judson Hall, A. B., English; Sherman Melville Woodward, A. M., algebra and elementary science; Frank Yale Adams, A. M., history and civics; David Hull Holmes, shopwork and drawing; Mrs. Mary Bernard Aguirre, history and Spanish; Mrs. Emma Monk Guild, English and mathematics; Ansel Augustus Tyler, Ph. D., physics and elementary science; Mary Elizabeth Plimpton, A. M., English; Opal LeBarron McGaughey, B. E., English reading and physical culture; Louise H. Foucar, B. Lit., Latin, French, and English; John Frederick Dabbs, Ph. B., algebra and bookkeeping; Katherine K. Barker, domestic science; Nora Towner, stenography and typewriting.

GENERAL INFORMATION.

In this department the university carries on the work of a model high school, with the added advantages of the shopwork and drawing of the manual-training department.

Students of sufficient age who have finished the study possible to them in their home schools are enabled to continue their preparation for college at the university under the most favorable circumstances.

The splendid equipment of the scientific laboratories is available for use in this subcollegiate work wherever it can be used advantageously, thus rendering strong work in elementary science possible.

The instructors in this department are assisted by the professors of the college department, several of whom regularly conduct subcollegiate classes.

By reference to the course of study, which follows, it will be seen that it offers a comprehensive curriculum for those who may not be able to pursue their studies beyond this, while it gives a good preparation for college.

To each student who completes the studies of this course a certificate stating that fact will be given, which certificate will entitle the holder to admittance to the higher courses of the university without examination.

COURSE OF STUDY.

[Numerals indicate number of recitations per week.]

First year: Arithmetic reviewed, 5; English, 5; American history, 5; English reading, 5.

Second year: Higher arithmetic and algebra, 5; English, 5; elementary science, 5; drawing and shopwork or domestic science, 7; English reading, 3.

Third year: Algebra, 5; English, 2; history, 3. Electives—Latin, German, French, Spanish, elementary science, bookkeeping, 5; drawing and shopwork or domestic science, 7; English reading, 3.

Fourth year: Geometry, 5; English, 3; civics, 2. Electives—Latin, German, French, physics, stenography, and typewriting, 5; shopwork and drawing or domestic science, 8; English reading, 2.

In the third and fourth years students must choose two subjects from the electives. If a language is elected, it must be pursued for two years.

MATHEMATICS.

The course in arithmetic will begin with percentage, and will include a thorough review of the remainder of the subject. The instructors will insist on thoroughness and accuracy and a comprehension of the unity of the subject.

Algebra is begun in the latter half of the second year and is continued throughout the third year. Especial attention is given to the transition from arithmetic to algebra, to the fundamental operations, and especially to factoring. The course will include as much as is found in any good text-book of algebra through quadratic equations.

Plane geometry continues through the fourth year. This will be so taught as to develop orderly habits of thinking and of investigation. To that end much original work will be required, including practical problems involving the application of the principles learned.

ENGLISH.

The course in English embraces the science of English grammar, composition, and rhetoric, besides a critical study of assigned classics. It will begin with a systematic study of grammar. The subject will be treated as a science and the pupil led to investigate for himself the laws and underlying principles of our language. The principles of analysis and parsing, the uses of the cases, of the voices, moods, and tenses, and of the auxiliary verbs will be carefully taught. Throughout the whole course attention will be paid to work in composition, the aim being to enable the student to express himself clearly, accurately, and with ease. In rhetoric, besides the usual subdivisions, much attention will be paid to the principles of style and expression. A thorough knowledge of the following classics or acceptable equivalents will be required: Longfellow's Evangeline, Irving's Sketch Book, Scott's Ivanhoe and Lady of the Lake, Whittier's Snow-Bound, Shakespeare's Julius Cæsar and Merchant of Venice, George Eliot's Silas Marner.

Under the general head of English reading the students will be given drill in the elementary principles of reading and of elocution.

HISTORY.

The aim of all of the work in history will be to lead the pupil to see the development of races and nations along political, social, and religious lines, and to arouse in him a love for the subject and a habit of broad and discriminate reading.

American history will be reviewed during the first year. Montgomery will be used as a text-book, but much collateral reading will be required, and the institutional side of the history will be made prominent.

The work of the third year will include ancient, mediæval, and modern history. The aim will be to give the student an idea of the essential unity of history and the leading facts in the political development of races and nations. Adams's European History will be used, supplemented by the reading of all references contained therein as fas as possible.

Fiske's Civil Government in the United States is used as the text-book in civics. The historical development of the subject is made prominent, while practical problems, such as taxation, municipal government, are made the subject of special investigation and study.

For an outline of the course in Latin, French, German, and Spanish, see preceding pages.

DRAWING AND SHOPWORK.

The drawing course is designed to be helpful in the study of the arts and sciences wherever graphic representation of the subject is possible. Historic ornament is studied in connection with the history courses. Sketches of apparatus are made in connection with the courses in physics and chemistry. Accurate instrumental drawings are made of the exercises in geometry and shopwork. The application of useful drawing is thus apparent at every stage of the student's development. At the end of each year's course every student is required to design and make some useful article involving the application of the principles learned and the use of the tools with which he has become familiar.

The shopwork will consist of bench work in wood and forge work. The course in bench work in wood consists of exercises with the different woodworking bench tools, so arranged as to embrace the manipulations of the tools in their various applications. It will also include the most rapid and economical methods of preparing the wood for the machine. Turning of all kinds will form a part of the course. In the forge work students will be carried through a series of graded exercises in both iron and steel.

DOMESTIC SCIENCE.

The course in domestic science covers the preparation which the proper care of the house requires. It includes home hygiene, household science, chemistry of cooking, the study of foods, and practice in all kinds of cooking, plain and fancy sewing, nursing, care of the house, management of servants, social duties, and customs of society.

BOOKKEEPING, STENOGRAPHY, AND TYPEWRITING.

Bookkeeping is taught by the modern budget system. The work is individual, and each student may progress as fast as his time and ability will permit. The course is thorough in all the details of office practice. The course includes instruction in commercial law. A complete course in stenography is offered, the Pitman system being used. The school is equipped with Remington typewriters.

PARLIAMENTARY PRACTICE AND DEBATE.

The higher classes in the subcollegiate department devote one period of each week to work in parliamentary practice and debate. The classes are organized under a regular constitution and by-laws. Instruction is given in parliamentary law, using Roberts's Rules of Order as a text-book. The members are required to introduce resolutions and prepare debates upon them; also to appear at stated times with recitations and declamations. They also have practice in performing the duties of secretary and in presiding in the meetings.

SCIENCE.

It is the object of the course in science to initiate the student into the processes and methods used in laboratory work; to teach close observation, careful manipulation, and logical deduction; to acquaint the student with the fundamental facts of the various branches of science, and to give full practice in the use of good English in describing various observations and experiments.

An introductory laboratory course is given in the second year. The third year is given half to botany and half to chemistry, pursued on the laboratory plan. During the fourth year a rigid course is given in physics, covering fully college preparatory physics, with ample experimental work. Abundant apparatus and laboratory facilities are supplied for all these courses.

AGRICULTURAL EXPERIMENT STATION.

Station staff.—The president of the university; R. H. Forbes, M. S., director; J. W. Toumey, M. S., botanist; A. J. McGlatchie, A. M., Phoenix, Ariz., agriculturist and horticulurist; G. H. True, B. S., Phoenix, Ariz., animal husbandry; A. A. Tyler, Ph. D., associate botanist; W. W. Skinner, M. S., assistant chemist; Angus McBride, clerk.

ITS ORGANIZATION AND WORK.

The Agricultural Experiment Station has been actively maintained as a department of the university, in accordance with Territorial enactment, since July 1, 1889, the Hatch Act creating it having been passed by Congress in 1887. The funds annually available from the National Government for the maintenance of the station amount to $15,000.

The object of the station, according to the Hatch Act, is "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." In accordance with the motives of the Hatch Act, as expressed above, the work of the experiment station at the present time may be divided into two parts: (1) The scientific investigation of subjects relating to agriculture. (2) The dissemination of useful information relating to agriculture.

In a Territory possessing such diversity of climate, soil, and water facilities as Arizona the subjects for investigation must be many, but the station pursues the policy of concentrating the attention of its staff upon those things of largest or most pressing importance. Some of the features of experiment-station work at the present time are the introduction of promising drought-resisting forage plants, methods of cultivation with a view to economy in the use of water, management of live stock, including dairying, the culture and propagation of the date palm, the study of the main irrigation water supplies of the Territory, and experimental work with the sugar beet. Some attention is also paid to the introduction of promising new fruits, to insect pests, to matters concerning irrigation, and to the continuing of soil studies carried on in times past. The results of these investigations have—some of them—been of marked value to the agricultural public, both in Arizona and elsewhere, and the value of scientific investigation of an economic nature is becoming more and more recognized by the thinking public of Arizona.

The results of the investigations undertaken by the station are published in bulletin form, usually upon the completion of the work. A popular series of articles entitled Timely Hints for Farmers has also been sent out twice each month during the last year, the objects of these publications being to present the results of station investigations to the farmer in popular form at the time when the information will be most useful. The distribution of these writings is without cost to all who wish and apply for them. A large and growing correspondence on subjects relating to agriculture testifies to the usefulness of the work at present being done by the station.

In order to still further extend the usefulness of this department a series of farmers' institutes is held each year in various localities for the purpose not only of giving information to those who meet with the members of the station staff, but also for the purpose of becoming acquainted with the different agricultural localities of the Territory and learning of the perplexities and problems which confront the farmer.

The offices and scientific laboratories of the experiment station are located at Tucson, in the university main building, and the advantage, both to the university and to the station, of conducting this work where the members of the staff have the advantage of association with the faculty of the university and with access to the university library and equipment is very great.

The experimental farm is situated northwest of Phoenix, the date-palm orchard is 3 miles south of Tempe, and the sugar-beet investigations during the current year have been conducted under the care of a special workman in the Upper Gila Valley.

At the invitation of the experiment station special work has been done by visiting scientists on the entomology and soils of Salt River Valley.

The principle on which all the work of the experiment station is conducted is to do each branch of work at the point where it can be done to best advantage, and the results attained show the wisdom of this mode of procedure.

All communications relating to the station should be addressed to the Experiment Station, Tucson, Ariz.

The Arizona School of Mines.

In addition to the facilities for general instruction in the arts of mining, metallurgy, and assaying, this department of the university is provided with a mill for working ores in large or small quantities, from a few pounds weight to a ton or more. Mill tests can be made by either the small 3-stamp mill or by the large 5-stamp battery. There are rolls for roller crushing and jigs and Rittinger tables for concentrating ores.

SCHEDULE OF RATES FOR ASSAYING AND WORKING ORES.

In accordance with the legislative enactment approved March 3, 1899, the rates for assaying heretofore in force under the law of March, 1897, have been changed. The 50-cent rate is no longer in force. Former circulars and schedules of rates are revoked and withdrawn. Under the provisions of the new law, the regents of the University of Arizona have established the following rates for assaying ores taken from deposits and mines in the Territory of Arizona:

Silver and gold, or either	$1.00
Silver, gold, and copper	2.00
Copper	1.00
Lead	1.00
Zinc	1.00
Gold, silver, copper, and lead	2.50
Gold, silver, copper, and iron	2.50
Gold, silver, copper, and zinc	2.50

All assays are made in duplicate and in the most careful and thorough manner.

The following rates have been established by the board of regents for assaying ores taken from deposits or mines without the Territory of Arizona:

Silver and gold, or either alone	$1.00
Copper	1.00
Lead	1.00
Zinc	2.50
Iron	2.00
Silica	1.50
Alumina	5.00

And for other determinations such rate as the director of the school of mines may in each instance fix.

The director is required in all cases to hold the assay until the fee or charge therefor is paid. Remittances may be made by check or money order; or the money, securely wrapped, may be sent with the sample.

Rates for sampling and working ores.

Lots of 100 pounds or less, including assays of three metals	$5.00
Each additional 100 pounds to 500 pounds	1.00
Over 500 pounds to 1 ton	10.00
Each additional ton	4.00
Ordinary stamp-mill test and plate amalgamation:	
For first ton or fraction of a ton	20.00
From 1 to 2 tons	30.00
Pan amalgamation, including crushing and assays, ton	20.00

Large lots proportionately less; small lots more in proportion.

CYANIDE PROCESS.

The school of mines is prepared to make experimental tests of ores and of tailings by the cyanide process, in large or small quantities, at rates to be agreed upon with the director.

Working tests and experiments by other processes may be undertaken at rates to be agreed upon in each instance, depending upon the amount of materials, time, and labor required.

Concentrating (including all assays).

Wet or dry test of small lots (under 500 pounds)	$15.00
500 pounds to 1 ton	20.00
Each additional ton	7.00

QUALITATIVE TESTS.

The determination of the nature of rare and peculiar minerals, not requiring a chemical analysis or an assay, is made gratuitously. Samples sent for this purpose should be in their original condition, as broken out, and not crushed to a powder or pulp. Tests requiring determination of the presence of gold or silver must be paid for at the rate of 1 cent per ounce. They should be distinctly labeled inside of the package with the name of the sender, and a letter should be posted at the same time giving the full name and address and inclosing a stamp for the reply. This offer of free examination is intended to apply to minerals unknown to the sender and does not cover special tests for precious metals or for any metal the presence of which is usually determined by an assay.

HOW TO SEND SAMPLES.

For small samples, under 4 pounds in weight, the most expeditious and cheapest way is to send by the ordinary mail. If samples or letters containing a postal order are sent by registered mail, a delay of from two to three days is caused, as notice of arrival is given first and then the registered parcel must be sent for. A similar delay results from sending by express. The express company does not deliver parcels at the university. Delays often result from the want of identification. Sometimes the only clue to the name of the sender is the comparison of the handwriting upon the sample and that upon the letter. The postal laws permit the name of the sender to be written and inclosed in the package. Each sample should be labeled with a slip of paper inside, giving the name and locality of the claim and the address of the sender.

The name of the claim is desired in order that the value and distribution of the mineral wealth of the Territory may be better known.

Special rates of freight on consignments to the "Director of the School of Mines" are granted by the Southern Pacific Railroad from points in Arizona. Ask the agent at shipping point for particulars.

All business communications, checks, and money orders should be addressed to the Arizona School of Mines, William P. Blake, director, Tucson, Pima County, Ariz.

BOARD OF REGENTS.

Ex-officio: Hon. N. O. Murphy, governor of Arizona; Hon. R. L. Long, superintendent of public instruction.

Appointed by the governor of the Territory: Hon. William Herring, chancellor; Hon. H. W. Fenner, M. D., secretary; Hon. Herbert B. Tenney, treasurer; Hon. Charles R. Drake, Tucson.

OFFICERS OF INSTRUCTION AND GOVERNMENT, 1899-1900.

Millard Mayhew Parker, president, professor of civics; A. B. and A. M., Wesleyan University, Middletown, Conn.; principal High School, North Livermore, Me., 1875; principal Academy, Glastonbury, Conn., 1876-77; principal High School, Holliston, Mass., 1877-1882; professor Greek and Latin, Sierra Madre College, Pasadena, Cal., 1884-1886; principal Academy, Pasadena, Cal., 1886-1891; vice-president and professor of Greek and Latin, Throop Polytechnic Institute, Pasadena, Cal., 1891-1897; president University of Arizona, 1897.

William Phipps Blake, director School of Mines, professor of geology, metallurgy, and mining; Ph. B., Yale University; A. M., Dartmouth College; assistant chemist

New York Medical College, 1852; chemist and mineralogist of the New Jersey Zinc Company; geologist and mineralogist of the United States Pacific Railroad Survey, 1853; author and editor of reports on United States Pacific Railroad Surveys; editor Mining Magazine and Journal of Geology, 1858–1860; mining engineer to the Government of Japan, 1862–63; professor of geology and mining, College of California, 1866; commissioner of California to Paris Exposition, 1867; edited reports of United States commissioner to Paris, consisting of six volumes, in 1867–1871; chief of the scientific staff of the Santo Domingo Commission, 1871; commissioner for Connecticut, International Exposition, Philadelphia, and chairman of classification committee, 1871–1877; commissioner to Vienna Exposition, 1873; United States commissioner to World's Fair at Paris, 1878, and secretary of scientific commissioners; mining engineer, 1879–1895; author of many contributions to scientific publications; Territorial geologist; professor of geology, metallurgy and mining, University of Arizona, 1895.

James William Toumey, professor of botany, botanist Agricultural Experiment Station; A. B. and A. M., Michigan Agricultural College; assistant department of botany, Michigan Agricultural College, 1890–91; professor of biology, University of Arizona, 1891; professor of botany, University of Arizona, 1891; special agent United States Department of Agriculture, division of botany, summer 1892; special work, Harvard University, summer 1893; special agent and expert United States Department of Agriculture, division of forestry, summer 1899; superintendent of tree planting, United States Department of Agriculture, division of forestry, 1899.

Howard Judson Hall, librarian, professor of English; B. S., Michigan Agricultural College; A. B., Leland Stanford Junior University; instructor in English, University of Arizona, 1891–1895; professor of English, University of Arizona, 1895; graduate student Harvard University, 1899.

Robert Humphrey Forbes, director Agricultural Experiment Station, professor of chemistry; B. S. and M. S., University of Illinois; instructor in chemistry, University of Illinois, 1891–1893, also special assistant in Illinois Experiment Station laboratories; fellow and special student in chemistry, Harvard University, 1893–94; chemist Arizona Agricultural Experiment Station, and professor chemistry, University of Arizona, 1894.

Sherman Melville Woodward, professor of mathematics and mechanics; M. S., Washington University, St. Louis; A. M., Harvard University; teacher of mathematics and science, Rayen High School, Youngstown, Ohio, 1893–1895; student, Harvard, 1895–96; professor mathematics and mechanics, University of Arizona, 1896.

Frank Yale Adams, lieutenant-colonel, governor's staff, commandant of cadets, professor of history and pedagogy; A. B. and A. M., St. Lawrence University; principal Academy, Naples, N. Y., 1888–1890; instructor, West Point Military Academy Preparatory School, 1890–91; principal Crown Point High School, 1891–1893; superintendent of schools, St. Johnsville, N. Y., 1893–1897; professor of ancient and modern languages, University of Arizona, 1897–1899; professor of history and pedagogy, 1899.

Frank Nelson Guild, professor of mineralogy, associate professor of chemistry; B. S., University of Vermont; instructor in physics and French, Chicago Manual Training School, 1894–95; professor of chemistry and geology, College of Montana, 1895–1897; professor of mineralogy, University of Arizona, 1897.

Alfred James McClatchie, professor agriculture and horticulture; B. A., University of Nebraska; M. A., Olivet College; professor biology, Throop Polytechnic Institute, 1892–1896; author of "Flora of Pasadena and Vicinity," "A Guide to the Study of Plants," "Biological Work in Secondary Schools," "Seedless Plants of Southern California;" professor of agriculture and horticulture, University of Arizona, 1898.

David Hull Holmes, instructor shopwork and drawing; graduate St. Louis Manual Training School; special student Washington University; draftsman in architect's office, instructor drawing, University of Missouri; instructor drawing, University of Colorado; instructor drawing, University of Arizona, 1898.

Mrs. Mary Bernard Aguirre, instructor Spanish and history; graduate of Methodist Female College, North Independence, Mo.; Private Finishing School, Baltimore, Md.; taught in public schools in Arizona twenty years; instructor in history and Spanish, University of Arizona, 1896.

Mrs. Emma Monk Guild, instructor subcollegiate department; graduate Albany, N. Y., Normal College; assistant and principal public schools, Cohoes N. Y., 1870–1881; vice-principal Tucson Public School, 1882–1885; principal Florence, Ariz., public schools, 1885–1887; instructor in English and mathematics, University of Arizona, 1897.

Ansel Augustus Tyler, associate professor biology; A. B. and A. M., Lafayette College; Ph. D., Columbia University; instructor botany and physics, Easton, Pa., High School, 1891–92; assistant in biology, Lafayette College, 1892–1894; graduate student, Columbia University, 1894–1897; instructor in biology, Union College, 1897–98; instructor in botany, Syracuse University, 1898–99; associate professor biology, University of Arizona, 1899.

Mary Elizabeth Plimpton, preceptress, acting professor of English literature; student Northwestern University, 1889–1892; A. B. and A. M., Woman's College, Baltimore; assistant in library and English department, Woman's College, Baltimore, 1893–1895; professor English language and literature, University Southern California, 1895–1899; acting professor English language and literature, acting librarian University of Arizona, 1899.

Opal Le Baron McGauhey, instructor in physical culture and English reading; B. E., Martyn College of Oratory, Washington, D. C.; graduate of Ralston School Physical Culture; public school teacher, Nebraska and California, 1888–1899; instructor in art of expression and physical culture, University of Arizona, 1899.

John Frederick Dabbs, instructor mathematics and bookkeeping; Ph. B. and A. B., Missouri Valley College; professor Greek and Latin, Arkansas Cumberland College, 1893–1899; instructor, University of Arizona, 1899.

Louise Henrietta Foucar, instructor in botany, mathematics, and languages; B. A. Lit. B., Denver University; post-graduate student, Denver University, 1894–1896; instructor in modern languages, Denver University, 1894–95; student in Europe, 1896–97; instructor, University of Arizona, 1899.

Mark Walker, jr., commercial assayer; B. S., University of Arizona; assistant chemist, Agricultural Experiment Station, University of Arizona, 1897–1899; commercial assayer, 1899.

William W. Skinner, assistant chemist, Agricultural Experiment Station; B. S., Maryland Agricultural College; M. S., Columbian University; assistant State chemist of Maryland and assistant chemist Maryland Agricultural College, 1895–1900; temporary assistant, United States Department of Agriculture, detailed on special work, 1900; member American Chemical Society; assistant chemist, Agricultural Experiment Station, 1899.

Katherine K. Barker, instructor domestic science; graduate sloyd training school and domestic science department, Throop Polytechnic Institute; assistant sloyd department, Throop Polytechnic Institute, 1898–99; instructor in domestic science, University of Arizona, 1899.

Gordon H. True, B. S., professor of animal husbandry, Agricultural Experiment Station; B. S., University Wisconsin; instructor in dairying, Michigan Agricultural College, 1894–1899; professor of animal husbandry, University of Arizona, 1899.

Nora Towner, stenography.

Charles Pierce Richmond, military instructor.

Herbert Brown, curator of Territorial museum.

INDIANS.

The Indians of the Territory have been law abiding and industrious during the year. Great interest in education has developed among them and all kinds of outlawry are practically ended. An affray occurred in northern Arizona since my last report was submitted between a party of Navajos engaged in hunting off their reservation near Flagstaff in northern Arizona and some white officers who attempted to arrest them for an alleged misdemeanor, which resulted in the death of one white man and the wounding of two others; two Indians were killed and two others wounded. The fight was evidently caused by the failure of the parties to understand each other. The Indians who survived the encounter have been lately tried for murder and acquitted. A full detailed account of the conflict was submitted to your office by me at the time it occurred. The Indians show a commendable disposition to submit to trial in the courts for offenses against the law when assured fair procedure.

The Pima Indians on their reservation at Sacaton were short of water for irrigating purposes during the year and an appropriation was asked of and granted by Congress to aid in their support. The last two seasons, however, have been abnormally dry; otherwise their ditches would have been supplied from the Gila River. A dam constructed by the Government at the San Carlos Agency would not only insure the Indians a sufficient supply of water to make them self-supporting and relieve the Government of the necessity of appropriating for them annually, but would furnish water to reclaim a large area of land outside the reservations. The following report from Superintendent McCowan, of the Indian school near Phoenix, gives a clear general idea of the Indians throughout the Territory:

The following tables regarding our Indian population, etc., compiled from the latest reports of the various Indian agents, furnish the closest approximation of the facts obtainable and present an interesting epitome of present Indian life:

Agency and tribe.	Population.	Civilization.										
		Citizens dress.		Indians who can read.	Indians who use enough English for ordinary conversation.	Dwelling houses.		Indian apprentices.	Per cent of subsistence obtained by—		
		Wholly.	In part.			Built for Indians during the year.	Occupied by Indians.		Labor in civilized pursuits.	Hunting, fishing, root gathering, etc.	Government rations.
Colorado River Agency.											
Mohave	662	662	......	190	150	6	76	....	50	.....	50
Mohave at Needles	1,300	1,200	100	300	400	......	......	....	100	25	....
Mohave at Fort Mohave											
Chemehuevi	300	....	100	400	400	......	......	....	75	.....	....
Fort Apache Agency.											
White Mountain Apache	1,849	108	71	35	65	1	3	....	70	10	20
Under industrial teacher.											
Hualapai	611	350	250	60	65	......	60	....	50	25	25
Yava Supai	250	200	50	70	68	......	......	....	.....	.....	....
Navajo Agency.											
Navajo	20,100	500	1,000	250	500	20	150	....	99	.....	....
Moquis Pueblo	2,641	....	16	28	24	......	67	....	100	.....	....
Pima Agency.											
Pima	4,260	7,000	871	1,107	1,500	......	400	....	90	.....	10
Maricopa	340										
Papago	1,225										
Papago, nomadic	2,046										
Papago at San Xavier	502	502	......	21	35	8	......	....	.....	.....	....
San Carlos Agency.											
Apache	2,234	500	2,400	400	900	......	......	....	67	.....	33
Mohave	702										
Apaches near Mohawk, on Lower Gila River	300	....	......	......	......	......	......	....	.....	.....	....

Agency and tribe.	Miscellaneous products of Indian labor.					
	Lumber sawed.	Wood cut.	Freight transported by Indians with their own teams.		Value of products of Indian labor disposed of.	
			Amount.	Earned by freighting.	To Government.	Otherwise.
Colorado River Agency.	*M ft.*	*Cords.*	*M lbs.*			
Mohave (on reserve)		900	287	$8,022	$2,110	$300
Fort Apache Agency.						
White Mountain Apache	48	850			24,558	500
Under industrial teacher.						
Hualapai		800			299	500
Yava Supai		6	20	100		1,000
Navajo Agency.						
Navajo		100				
Moqui Pueblo		250	125	1,563		8,000
Pima Agency.						
Pima, Papago, and Maricopa		500	343	662	6,563	10,000
Papago on San Xavier Reserve		2,500				17,000
San Carlos Agency.						
Apache and Mohave		1,500			13,159	10,000

Agency and tribe.	Religious.						Marital.		Vital.		Criminal.	
	Missionaries.		Indian church members.	Church buildings.	Amount contributed by religious and other societies.		Marriages during year.	Divorces during year.	Births.	Deaths.	Indians killed.	
	Male.	Female.			For education.	For church work.					By Indians.	Suicides.
Colorado River Agency.												
Mohave									13	38		2
Fort Apache Agency.												
White Mountain Apache	1						16	8	71	60	2	
Under industrial teacher.												
Hualapai						$293						
Yava Supai												
Navajo Agency.												
Navajo	2	4								10	2	
Moquis Pueblo	1	2										
Pima Agency.												
Pima Maricopa Papago Papago, nomadic	6		980	6	$20,000	2,500	15		179	135		
Papago at San Xavier			200						23	20		
San Carlos Agency.												
Apache Mohave	1								76	131	2	

Agency and tribe.	Lands.				Families actually living upon and cultivating lands allotted in severalty.	Crops raised.				
	Cultivated during the year by Indians.	Broken during the year by Indians.	Fences.			Wheat.	Oats, barley, and rye.	Corn.	Vegetables.	Hay.
			Acres under.	Made during year.						
Colorado River Agency.	Acres.	Acres.		Rods.		Bush.	Bush.	Bush.	Bush.	Tons.
Mohave (on reserve)	350	169	130	......	......	100	......	100	20	50
At Needles and Fort Mohave	50	......	......	......	......	......	......	125	......	......
Fort Apache Agency.										
White Mountain Apache	1,240	10	1,240	......	......	......	321	2,275	10	991
Under industrial teacher.										
Hualapai	100	......	150	......	......	150	......	1,500	225	6
Yava Supai	325	25	325	1,000	......	45	......	500	75	10
Navajo Agency.										
Navajo	8,000	......	......	......	......	......	......	......	......	......
Moqui Pueblo	10,000	......	500	......	......	......	......	50,000	9,075	......
Pima Agency.										
Pima, Papago, and Maricopa	4,000	500	13,120	2,000	124	33,334	1,154	1,072	650	600
Papago on San Xavier Reserve	1,040	50	8,020	780	84	2,000	2,000	1,000	325	500
San Carlos Agency.										
Apache and Mohave	2,000	......	5,000	500	......	9,339	11,769	3,838	1,416	150

Agency and tribe.	Stock owned by Indians.						Roads.		
	Horses, mules, and burros.	Cattle.	Swine.	Sheep.	Goats.	Domestic fowls.	Made (miles).	Repaired (miles).	Day labor by Indians.
Colorado River Agency.									
Mohave (on reserve)	281	190	......	......	......	500	......	10	60
Mohave at Needles and Ft. Mohave	551	......	......	......	......	300	......	......	......
Fort Apache Agency.									
White Mountain Apache	5,728	848	......	......	......	159	2	5	400
Under industrial teacher.									
Hualapai	623	......	......	......	......	25	......	......	......
Yava Supai	365	......	......	......	......	......	......	109	250
Navajo Agency.									
Navajo	......	100,500	1,200	1,000,000	250,000	......	10	10	......
Moqui Pueblo	2,200	500	......	4,000	1,500	500	......	......	......
Pima Agency.									
Pima, Papago, and Maricopa	7,450	5,000	2	......	......	5,000	85	5	760
Papago on San Xavier Reserve	259	290	2	......	......	800	4	5	310
San Carlos Agency.									
Apache and Mohave	2,520	1,012	......	......	......	......	30	20	6,000

School.	How supported.	Capacity.	
		Boarding.	Day.
Colorado River Agency.			
Colorado River boarding	By Government	100	
Fort Mohave training	do	150	
Hualapai Reservation.			
Hualapai day, Hackberry	By Government		60
Hualapai day, Kingman	do		50
Supai Reservation day	do		60
Navajo Agency.			
Navajo boarding	By Government	120	
Little Water day	do		30
Keams Canyon, Moqui boarding	do	100	120
Oreiba day	do		40
Polacco day	do		40
Second Mesa day	do		40
Phœnix training	do	600	
Pima Agency.			
Pima boarding	By Government	150	
San Xavier day	Catholic Church		100
San Carlos Agency.			
San Carlos boarding	By Government	100	
Fort Apache Agency.			
Fort Apache boarding	By Government	175	

THE PHŒNIX INDIAN SCHOOL.

Phœnix is situated in the beautiful Salt River Valley of Arizona, and the Indian school is just 3 miles north of the city. The location is admirable because of the surrounding object lessons of splendid civilization and social life and the nearness to thousands of the Indian race.

The school was established in October, 1891. Its capacity is now 600, with an enrollment of about 700. The additional 100 are carried as outing pupils, i. e., pupils working in families. The school plant consists of about thirty buildings, large and conveniently arranged. The grounds are beautifully laid out, and the evergreen lawns and trees combine most harmoniously with the ever blue of this southern sky.

The year has been one full of hard work and expansion. The many improvements in progress and in contemplation at the close of the last fiscal year have been successfully completed, and the school is now a splendidly equipped institution.

Literary department.—Our literary department has always been persistently aggressive under our able principal and her corps of worthy assistants. From the kindergarten to the grammar grades industry and intelligence strive to meet the needs of eager and hungry constituents, and through awakened ambition attempt to lead to higher and better things.

Commercial department.—The commercial course has been started but a few months, and is considered a very important branch of our work. This course follows the completion of the ninth year of regular work and is so comprehensive that a holder of a diploma should be competent to fill successfully any position ordinarily filled by a graduate of any business college. It is not the aim, however, merely to fit the Indian boys and girls for positions in stores and offices, but rather to equip them for taking care of their own property and interests.

Manual-training department.—With the completion of our manual-training building we have been able to place our industrial department on an educative basis. The theory of the work is taught by drawings and intelligent lectures, thus raising the standard from the drudgery of constant striving to satisfy the economic needs of the school to the dignity of thoughtful comprehension. The pupils are no longer mere apprentices; they are students. They not only have use for their hands, but their brains are stimulated and active. Their hands are just as busy and more skillful, while their brains are ever striving to save time and material, thus adding to the sum of human usefulness and value.

The following trades are taught: Agriculture, baking, blacksmithing, cabinetmaking, carpentry, dairying, engineering, farming, gardening (including landscape), harness and shoe making, masonry, onyx manufacture and stone cutting, painting, printing, sewing, tailoring, wagon making, and cooking.

Possibly the most important industry established is that of domestic science, which teaches the theory and practice of cooking and housekeeping. Regular courses are established in this work, and it is obligatory upon every girl to graduate from this course, and also that of sewing, before diplomas are given them from the literary department.

I am very happy to state that the pupils do not look upon this branch of work as drudgery, but they are very fond of it and eager to enter the classes and to learn everything possible.

A school paper called the Native American has been established during the year, and is the source of much profit to our pupils in various ways, besides being an educational factor of great importance in bringing the whites to a realizing sense of the real Indian—his abilities and ambitions.

Besides issuing this weekly news-letter, the printing office has recently completed an elegant catalogue descriptive of the school work, which has been distributed very generally throughout the service. The work on the catalogue was all done at the school, the cover design being the creation of the art teacher, Miss Freddie A. Hough.

The last Congress made an appropriation for building an auditorium, which will be erected during the present year. This, with the construction of a new hospital, which we hope to get soon, will make the Phœnix school a completely and splendidly equipped plant throughout.

The student body represents some fifty different tribes, from nearly all the Western States and Territories. We have had several applications from Indians in Alaska to enter the school.

There exists very little difference in the natural mental ability of various tribes, but very considerable difference in energy, industry, and ambition. The river Indians (those living along the river bottom lands) are better natured, more docile, and less ambitious to excel than the mountain Indians. The Apache compare very favorably with other tribes, and will, when educated, make good citizens. The forty thousand and more Indians in Arizona will, I think, be fitted to enter into our civic and industrial life within another generation.

PUBLIC BUILDINGS.

The public buildings of the Territory comprise the capitol, at Phœnix; the Insane Asylum, at Phœnix; the University of Arizona, at Tucson; the Territorial prison, at Yuma; the normal schools, one at Tempe and the other at Flagstaff.

All of these buildings are in good condition, and, with the exception of the prison, are of modern construction and creditable to the Territory. At an early day the Territory will be compelled to provide new prison buildings.

All the buildings have been constructed at the expense of the Territory, the National Government having contributed nothing thereto.

Since my last report the capitol has been finished, and the various Territorial offices are now (September) being moved into it. It was constructed under the close supervision of an able, painstaking, and honorable commission, and it is safe to say that no public building anywhere has been erected with results more favorable to the taxpayers.

Funds for the construction were provided by a Territorial bond issue of $100,000, ratified by Congress, to which was added an appropriation by the twentieth legislative assembly, making the total cost of the building $130,000.

The top of the dome is 76 feet from the basement floor, and is surmounted by a statue of Victory 16 feet in height, making the height to the top of the statue 92 feet. The rotunda is 44 feet in diameter, while the great central light shaft, extending from the dome to the basement floor, is 20 feet in diameter, leaving a corridor 12 feet in width circling the light shaft on each floor. The first story is of granite and the superstructure of tufa stone—all Arizona products. The second or executive floor contains the offices of the governor, secretary of the Territory, auditor, and treasurer. The Territorial library is also on this floor in one of the most pleasant rooms in the building, 20 by 54 feet in size. The third or legislative floor contains the court room and chambers for the supreme court of the Territory; also the assembly and council rooms for the legislative bodies. These rooms are 36 by 38 feet in size, with galleries which will accommodate 400 to 500 people. Each legislative hall has six committee rooms for the use of the lawmaking bodies. The capitol will be lighted by gas and electric lights. Provisions for heating the building by steam have been made. The heating plants are located in the substory. On the substory or first floor are located the offices of the live stock sanitary commission, adjutant-general, and the capitol grounds and building commission.

LABOR.

As previously reported, this question has never materially disturbed affairs in Arizona. Temporary strikes have in a few instances occurred upon the great transportation lines, but they have seldom been serious in their nature, and have, with one exception, been quickly settled. Arizona is entirely free from contention caused by disagreements between capital and labor. Liberal wages are paid, and labor is usually contented. Americans are principally employed. There are very few foreigners in the Territory not naturalized. A few Mexicans and some Indians work as section hands on railroads, and Chinese and Japanese are employed as house servants, but a very large percentage of our labor is American, especially in the mines.

Laborers in Arizona are, as a rule, intelligent and law abiding. The supply seems to equal the demand, and few men who care to work need be idle here.

LEGISLATION.

The Territorial legislature has not been in session since the submission of my last annual report. The twenty-first legislature will meet the third Monday in January, 1901, and will be required to enact into law a revised Code of the Territorial Statutes. The work of code revision has been in the hands of a commission appointed for the purpose and authorized by the twentieth legislature.

UNDEVELOPED RESOURCES.

The undeveloped resources of Arizona in precious metals, agriculture, horticulture, grazing and timber, mineral springs, marble and building stone, onyx, coal, and nearly every natural product known to commerce, make the Territory one of the wealthiest subdivisions of the Union and insure its future as a great and prosperous State.

The agricultural development of Arizona has been carried to a point beyond which much further progress in the line of enlarging the cultivated area can not be achieved without an increased water supply.

The advantages offered by nature—a mild and almost superlatively healthful climate and a soil unexcelled in fertility and lying in level reaches in broad valleys unencumbered by wild vegetation and therefore ready for the plow, together with a ready market for all ranch and orchard products—have stimulated settlers in the work of reclaiming the desert, until the ultimate unit of the normal flow of the streams (except the Colorado River) has been diverted into irrigating canals.

The energetic, resourceful, and self-reliant spirit which characterizes the people of Arizona has led them to do all within their power to promote storage enterprises. Corporations and individuals have done a large amount of troublesome and expensive preliminary work. The numerous reservoir sites have been closely explored, and many of them have passed under the searching scrutiny of eminent engineers, and the feasibility of proposed reservoirs has been fully verified. In a few cases construction of some magnitude has been accomplished, but the work has been suspended while efforts are made to enlist additional capital.

Liberal laws have been enacted governing the appropriation of the flood waters and their conveyance through natural channels of the streams to the points of diversion. The work of educating the investing public as to the merits of storage enterprises has been carried on with patience and vigor, and with the return of prosperity to the whole country there have been encouraging indications within the past few months that Eastern capital is at last awakening to the value of Arizona reservoir securities. I have no doubt that final arrangements for the necessary capital for some of the best-known projects will be completed before another year.

THE ARID LANDS.

I believe if the arid public lands were ceded to the States and Territories in which they are situated that they would promptly be reclaimed and developed. I think if Arizona owned the untitled lands within the Territory such disposition could be made of a portion of them as would bring about the early construction of a complete and thorough water-storage and irrigation system. Moreover, the intelligence, patriotism, and public spirit of the people provide an unquestionable guaranty that the lands would be controlled and disposed of as a sacred public trust and in a manner thoroughly protective of all public and private interests. With the intelligent use of the rich endowment which the ownership of the lands would bestow, all desirable water-storage and irrigation systems could be provided without the creation of burdensome bonded indebtedness. If the lands were owned by the Territory the grazing lands could be leased in such a manner as to protect both sheep and cattle within the proper boundaries and at the same time provide a considerable revenue for the public treasury.

FEDERAL AID.

I am earnestly in favor of Federal aid for meritorious water-storage enterprises, and I believe it to be the duty of the Government to construct reservoirs or aid by appropriation their construction in specifically favorable places. A reservoir site situated on the Gila River, near San Carlos Indian Reservation, is acknowledged by all who have examined it officially and otherwise to be especially well adapted for the purpose of water storage. Engineers of the Government, after exhaustive examinations, have reported favorably upon it. The direct financial interests of the Government are affected; for if water is stored and furnished to the Indians it will not be necessary to appropriate large sums annually for their support, and in this case much of the public domain could be reclaimed and occupied by white settlers. I earnestly recommend the construction of the so-called San Carlos dam, and a suitable appropriation by Congress therefor.

WHIPPLE BARRACKS.

The people of Arizona are gratified to learn that the Secretary of War has determined to order the reconstruction and reoccupation of the famous and historical post of Whipple Barracks as soon as troops are available for the purpose. Healthfully situated, overlooking the growing city of Prescott, with quick railroad communication to the north, south, east, and west, and so located that it is the only garrison between the line of posts on the eastern border of the Territory and the Pacific coast, Whipple Barracks should be maintained as one of the important military posts of the West. It is especially well situated to control local disturbances, should any occur, being near the center of population in the Territory and within easy reach of the great mining camps and railroad lines, where large forces of men are employed, and its restoration and retention will insure security to life and property and establish confidence that law and order will at all times be upheld.

The post can be maintained with exceptional economy on account of cheap supplies obtainable from the Salt River Valley. New waterworks and a system of sewerage are being constructed by the city of Prescott which can be made available by the post. The sanitary advantages of this location can not be excelled in the country.

STATEHOOD.

I renew with all possible earnestness the arguments I have heretofore urged in favor of the admission of Arizona as a State. The progress of the Territory in population, wealth, and the development of material resources has been remarkable. The rapidity with which Arizona has developed from a primitive frontier region into one of the most progressive, enlightened, and law-abiding communities of the Union is without parallel.

The spirit of fairness so prominent in our national character would not longer permit Arizona to suffer the wrongs of Territorial vassalage if the Territory and its people were properly understood and appreciated.

Arizona has over 100,000 people and one hundred millions of taxable wealth if it were all assessed.

Every argument and principle which should in justice and right be considered in connection with the admission of the Territories rest simply upon their ability to maintain themselves as States and the desire of a majority of their people for self-government. No law, precedent, nor construction of law can be found to the contrary, and while no specific regulations exist for the guidance of Congress in the admission of States, the law as recognized by custom and precedent has become a fundamental part of our national policy, that whenever the people of a Territory of this Union express the desire for self-government and can furnish satisfactory proof of their competency in population and wealth, it is not only their right to be admitted to statehood, but it is clearly the duty of Congress to admit them. This is conceded by all of the authorities on constitutional law and precedent, and any other view is repugnant to the very inspiration and patriotism of the Republic.

Both of the great political parties have specifically declared in their platforms in favor of the admission of the remaining Territories, and I have faith that the administration now so wisely controlling and directing national affairs will, without further delay, grant our prayer for self-government.

RECOMMENDATIONS FOR CONGRESSIONAL LEGISLATION AND ACTION OF THE INTERIOR DEPARTMENT.

(1) That Arizona be admitted into the Union as a State.

(2) That all the public lands within the Territory be ceded to the State of Arizona at the time of admission.

(3) That Congress aid by liberal appropriations the construction of storage reservoirs within the Territory and particularly the construction of a dam at San Carlos on the Gila.

(4) That all public lands within the Territory be surveyed.

(5) That a Government assay office and branch mint be established within the Territory.

(6) That a suitable appropriation be made for artesian-well explorations in Arizona.

(7) That a commission be appointed for ethnological and archæological research within the Territory and that a suitable appropriation be made by Congress therefor.

(8) That a fifth judicial district be created.

(9) That salaries of Federal judges of the Territory be increased.

(10) That appropriation be made by Congress to pay the governors and secretaries of Territories the salaries allowed them by law.

Respectfully submitted.

N. O. Murphy, *Governor*.

Hon. E. A. Hitchcock,
Secretary of the Interior.

OFFICIAL ROSTER.

EXECUTIVE DEPARTMENT.

Governor (appointed by the President), Nathan O. Murphy, Phoenix; private secretary to the governor and Spanish interpreter and translator, Sims Ely, Phoenix; secretary of the Territory (appointed by the President), Charles H. Akers, Phoenix; assistant secretary of the Territory, Harry R. Tritle, Phoenix; Territorial treasurer, Thomas W. Pemberton, Phoenix; Territorial auditor, George W. Vickers, Phoenix; attorney-general, Charles F. Ainsworth, Phoenix; superintendent of public instruction, R. L. Long, Phoenix; adjutant-general, H. F. Robinson, Phoenix.

BOARD OF CONTROL.

Governor N. O. Murphy, chairman; George W. Vickers, auditor; Ephraim J. Bennitt, citizen member; Frank D. Lane, clerk.

JUDICIARY DEPARTMENT.

Supreme court (appointed by the President): Chief justice, Webster Street, Phoenix; associate justices, George R. Davis, Tucson; Fletcher M. Doan, Florence; R. E. Sloan, Prescott; clerk, Thomas A. Grindell.

District court, first judicial district (comprising the counties of Pima, Cochise, and Santa Cruz): Judge, George R. Davis, Tucson; clerks, Clinton D. Hoover, Tucson; A. H. Emanuel, Tombstone; Samuel F. Noon, Nogales; commissioners, William H. Culver, Tucson; Frank J. Duffy, Nogales; A. H. Emanuel, Tombstone.

District court, second judicial district (comprising the counties of Pinal, Gila, and Graham): Judge, Fletcher M. Doan, Florence; clerks, Daniel C. Stevens, Florence; Frank Dysart, Solomonville; Charles T. Martin, Globe.

District court, third judicial district (comprising the counties of Maricopa and Yuma): Judge, Webster Street, Phoenix; clerks, W. C. Foster, Phoenix, Maricopa County; W. H. Brinley, Yuma, Yuma County; commissioners, C. W. Johnstone, Phoenix; W. H. Brinley, Yuma.

District court, fourth judicial district (comprising the counties of Yavapai, Mohave, Coconino, Navajo, and Apache): Judge, R. E. Sloan, Prescott; clerks, J. W. Watts, Prescott, Yavapai County; L. O. Cowen, Kingman, Mohave County; Charles Keller, Flagstaff, Coconino County; F. J. Watron, Holbrook, Navajo County; John T. Hogue, St. Johns, Apache County.

BOARD OF EQUALIZATION.

M. P. Freeman, Tucson, first judicial district; Michael Ohl, Bonita, second judicial district; George W. Vickers, Phoenix, third judicial district; R. N. Fredericks, Prescott, fourth judicial district; clerk, Harvey J. Lee, Phoenix.

OFFICERS OF THE TERRITORIAL PUBLIC-SCHOOL SYSTEM.

Territorial board of education: N. O. Murphy, governor; R. L. Long, superintendent of public instruction; Thomas W. Pemberton, Territorial treasurer.

Board of regents, University of Arizona: Governor N. O. Murphy, ex officio member; M. M. Parker, president; William Herring, chancellor, Tucson; Charles R. Drake, Tucson; Herbert Tenney, Tucson; H. W. Fenner, Tucson; R. L. Long, superintendent of public instruction, ex officio.

Board of education of Territorial normal school: R. L. Long, superintendent of public instruction; Thomas W. Pemberton, Territorial treasurer; James H. McClintock, Phoenix; A. A. Dutton, Flagstaff; T. E. Pollock, Flagstaff.

SUPERINTENDENT TERRITORIAL PRISON.

Herbert Brown, Yuma.

SUPERINTENDENT TERRITORIAL INSANE ASYLUM.

Dr. J. Miller, Phoenix.

LIVE-STOCK SANITARY COMMISSION.

W. C. Barnes, Holbrook, chairman; A. C. McQueen, Mesa; W. F. Nichols, Willcox.

TERRITORIAL VETERINARIAN.

Dr. J. C. Norton, Phoenix.

FISH AND GAME COMMISSIONERS.

J. L. V. Thomas, Flagstaff; John McCarty, J. K. Day.

UNITED STATES DISTRICT ATTORNEY.

R. E. Morrison, Prescott; assistant United States attorney, Thomas D. Bennett, Phoenix.

UNITED STATES MARSHAL.

William M. Griffith, Tucson.

UNITED STATES INTERNAL REVENUE COLLECTOR FOR NEW MEXICO AND ARIZONA.

A. L. Morrison, Santa Fe, N. Mex.; chief deputy, first division, S. M. Cullom.

UNITED STATES INTERNAL REVENUE COLLECTOR OF CUSTOMS.

W. M. Hoey, Nogales.

UNITED STATES LAND OFFICE, PRESCOTT.

F. A. Tritle, register; J. C. Martin, receiver.

UNITED STATES LAND OFFICE, TUCSON.

M. W. Moore, register; J. H. Bauman, receiver.

UNITED STATES SURVEYOR-GENERAL.

George Christ, Tucson.

DELEGATE TO CONGRESS.

J. F. Wilson, Prescott.

BOARD OF REGISTRATION IN DENTISTRY.

F. C. Devendorf, Tucson; A. A. Doherty, Nogales; E. C. Hyde, Phoenix; H. J. Jessop, Phoenix; A. P. Preston, Globe.

BOARD OF MEDICAL EXAMINERS.

Winfred Wylie (regular school), Phoenix; D. M. Purman (regular school), Phoenix; George Goodfellow (regular school), Tucson; W. L. Woodruff (homeopathic school), Phoenix; C. W. Woods (eclectic school), Jerome.

CAPITOL GROUNDS AND BUILDING COMMISSION.

E. B. Gage, Prescott; Walter Talbot, Phoenix; Frank H. Parker, Phoenix.

REPORT

OF THE

GOVERNOR OF NEW MEXICO FOR THE YEAR ENDING JUNE 30, 1900.

SANTA FE, N. MEX., *September 12, 1900.*

SIR: In obedience to your request I have the honor to herewith transmit to you my report of the Territory of New Mexico for the year ending June 30, 1900, showing the progress and development of our Territory during that period.

I desire to call special attention to the following subjects contained in my report: Education, statehood, report of the land commissioner, railroads, irrigation, population, financial condition, and taxable property of the Territory and each county, cliff dwellings, agricultural and horticultural development, mining, cattle, sheep and wool, forest reserves, and public buildings.

I have the honor to be, sir, your most obedient servant,

MIGUEL A. OTERO,
Governor of the Territory of New Mexico.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

NEW MEXICO.

GEOGRAPHICAL LOCATION AND GENERAL RESOURCES.

New Mexico covers five degrees of the north temperate zone, extending from the thirty-second to the thirty-seventh parallel. Thus it corresponds in length and latitude with the two Carolinas and the major part of Georgia on the Atlantic coast, or with Tennessee and the upper two-thirds of Alabama and Mississippi coming inland. Only Florida among the American States lies wholly south of New Mexico's lower boundary, while but seven and one-half degrees, or one and a half times the Territory's own length, would extend that boundary to the northern limit of the torrid zone. In Europe but the extreme southern parts of Spain and Greece lie within New Mexico's latitudes. All the great resorts of France and Italy, Spain and Greece, with their celebrated skies and boasted climates, lie decidedly farther north. By location New Mexico is distinctly and emphatically a southern country.

PHYSICAL CONFORMATION OF NEW MEXICO.

The topography of New Mexico is interesting, but complex. In shape a parallelogram, with an average breadth of 335 miles and length of 367, it lies, so to speak, broadside to the sun, sloping from north to south, with an elevation of 7,000 feet in the former, sinking down to 3,500 feet in the latter, while many mountain peaks reach a height varying from 8,000 to 13,000 feet. These peaks and their connecting ranges are so scattered as to form the Territory into five distinct watersheds with their respective valleys. The Rio Grande divides New Mexico from north to south into very nearly equal portions and is to this country what the Nile is to Egypt. On the northeast the Canadian outlets the waters of that section into a tributary of the Mississippi, while on the southeast the Pecos has eroded a valley second only in extent to that of the Rio Grande, of which it is the chief tributary. In the northwest the San Juan and in the southwest the Gila collect the waters ultimately reaching the Pacific Ocean.

Each of these main rivers has a vast number of affluent streams, so great in fact that New Mexico is more largely supplied with water courses than is any other mining State or Territory. Along each stream are valleys, beyond the valleys high table-lands called mesas, and beyond these the mountain ranges proper. In the mountains and in many of these mesas are deep gorges or canyons with almost perpendicular walls. These collect the water from the melting snows and convey it to the streams ramifying it in all directions. Such, then, is the topography of the Territory—mountain peaks and chains, high table-lands, and lower lying valleys falling away to the south, thus securing a southern exposure throughout its vast extent of 122,580 square miles, or an area of 100 square miles larger than the land surfaces of New England, New York, and Maryland combined, or 1,241 square miles larger than all England, Scotland, Ireland, and Wales.

ABSENCE OF MOISTURE.

The aridity of New Mexico arises partly from her location, partly from her altitude, and partly from her topography. Her location is in the midst of the formerly so-called "Great American Desert," her borders about equidistant, or 500 miles each, from the Gulf of Mexico and the Pacific Ocean at their nearest approach. The Gulf of California, at its northern extremity, lies some 150 miles closer, but its water surface is inconsiderable.

The low-lying plains east of the Rocky Mountains draw the moisture-laden winds from the Gulf of Mexico, causing them to pass eastward of this section, but at the same time drawing over the Territory the winds from the Pacific and from the Gulf of California. Before these can reach New Mexico, however, they must climb, height by height, the ascending plateaus of Arizona, culminating in the bald-faced peaks of the Continental Divide. All know that the warmer the air the more water it will hold; and, on the other hand, the more the air is chilled the more it parts with its moisture. Every succeeding altitude but wrings more water from the air, just as each stronger grip of the hand squeezes more water from the sponge. When these almost desiccated winds reach New Mexico only the mountain chains and peaks can draw further moisture from them, leaving the valleys and table-lands with but the scantiest of scant supplies. This is why the average rainfall in the valleys of this Territory will not exceed an inch per month, two-thirds of the entire supply falling during the summer. Compare this with an average yearly precipitation at New York of 43 inches, Boston 45, Savannah 48, and the smallness of the rain supply will begin to be appreciated.

But altitude increases aridity by decreasing atmospheric pressure, and thus accelerating evaporation. The elevation of New Mexico averaging about 1 mile above sea level and reaching in the higher valleys to nearly 2 miles, it can be seen at once that water here most readily gives off its vapor. Especially is this true when taken in connection with the dry condition of the air and the almost ceaseless movements of the winds. The moisture that falls is immediately taken up into the air again. A snow of 2 or 3 inches in depth will pass away in a few hours, leaving the ground dry, having apparently returned into the air instead of melting. A refreshing shower in a day or two will have disappeared, leaving no mud behind. This is why any kind of a cloud is rare, and a day during some part of which the sun does not shine is almost unknown. Then, too, it must be remembered that the general slope of the country is on an average of about 10 feet to the mile, causing water, even in the streams (unless impounded), to run quickly away. For these reasons the humidity of the air in New Mexico averages about 36 per cent, while in New England it is 73 per cent, Florida 75 per cent, San Francisco 76 per cent, and the Gulf States 79 per cent.

RESOURCES OF NEW MEXICO.

FRUIT.

In the metropolitan markets of the Western States New Mexico's horticultural products command from 5 to 15 per cent greater price than the California products, owing to their size, richness in color, and peculiarly delicate flavor. In grapes, for which the Rio Grande Valley is famous, the Flame Tokay, the Muscats, the Black Hamburgs, and similar choice varieties are grown to prefection. In every quarter of the Territory are profitable orchards of apples, pears, peaches, cherries, plums, nectarines, and all the small fruits indigenous to the temperate and semi-tropic zones.

SUGAR BEETS.

Experiments covering a period of three years demonstrate that New Mexico excels any other country or section in the world in the quantity and quality of sugar beets. In 1896 in the Pecos Valley some 1,400 acres of beets were harvested. The average yield per acre was a little over 16 tons, and the average percentage of saccharine matter was over 16, the highest record ever made. The gross returns to the farmer averaged $67 per acre, and the cost of raising the crop was a little less than $22 per acre. The almost perpetual sunshine during the growing season is the cause of the extra percentage of sugar in the beets, and the richness and adaptability of the soil accounts for the heavy yield.

CEREALS AND VEGETABLES

Of innumerable variety are profitably produced in New Mexico. The latter are notable for size and flavor, as well as their keeping qualities. Rio Grande Valley oats took the second prize at the World's Fair. Every field crop and all classes of vegetables can be and are grown with success and profit.

MINERALS.

It is no exaggeration to affirm that, in point of natural resources, none of the peerless Rocky Mountain States exceed New Mexico. Gold, silver, copper, iron, zinc, lead, mica, coal (anthracite and bituminous), marble, fire clay, alum, sulphur, soda, salt, asphalt, gypsum, etc., are found in paying quantities in almost every county in the Territory. In many localities are valuable deposits of onyx, while the turquoise supply of the world is largely furnished bv the New Mexico mines.

TIMBER AND COAL.

These essentials to the home seeker are plentiful and cheap in New Mexico. Tracts of virgin forest, large or small, may be purchased now at astonishingly low figures, since the United States court has rendered such timely service in settling titles to the land grants.

MINERAL SPRINGS.

The attention of the tourist and health seeker is especially invited to the number and varied character of the mineral waters in New Mexico. These are easily accessible by rail, and offer every reasonable accommodation to the visitor. Among such resorts are the Las Vegas Hot Springs, the Jemez Hot Springs, the Ojo Caliente Hot Springs, Hudson Hot Springs, the Sulphur Hot Springs, the Macbeth, Taylor, and Coyote mineral waters.

DESIRABLE LANDS.

New Mexico contains nearly 79,000,000 acres. Of these there are about 24,000,000 acres contained in land grants, Indian and military reservations, railroad grants, and Government entries, which leaves available an area of about 55,000,000 acres of land, capable of supporting an immense population running up into the millions.

Thousands of acres of wild lands are to be had by complying with the United States land laws, much of which is contiguous to water and is desirable for colonization purposes when ditches and water-storage reservoirs are provided. The land-grant question is no longer a bugaboo in New Mexico, and through the action of the land court titles to vast tracts have been cleared up and settled. Some millions of acres have been confirmed by the courts to private ownership, while, on the other hand, an equal acreage has been rejected, so far as the grant claimants are concerned, and the land added to the public domain, subject to entry.

OFFICIAL REGISTER.

Territorial officers.—Governor of the Territory of New Mexico, Miguel A. Otero, Las Vegas, N. Mex.; private secretary to governor, Miss N. P. Crane, Santa Fe, N. Mex.; secretary of the Territory, George H. Wallace; clerk in secretary's office,

C. P. Wallace; solicitor-general, Edward L. Bartlett; auditor, Luis M. Ortiz; treasurer, J. H. Vaughn; superintendent of Territorial penitentiary, H. O. Bursum; superintendent of public instruction, Manuel C. de Baca; librarian, Judge Lafayette Emmett; adjutant-general, William H. Whiteman; mine inspector, Jo. E. Sheridan; coal-oil inspector, John S. Clark.

Judiciary.—Chief justice of the supreme court and judge of the fourth judicial district, William J. Mills; clerk, Secundino Romero; clerk to the supreme court, José D. Sena. Associate justices of the supreme court—first judicial district, John R. McFie; clerk, A. M. Bergere; judge second judicial district, J. W. Crumpacker; clerk, H. P. Owen; judge third judicial district, Frank W. Parker; clerk, J. P. Mitchell; judge of the fifth judicial district, Charles Leland; clerk, John E. Griffith.

Delegate in Congress.—Pedro Perea.

Surveyor-general.—Quinby Vance.

United States revenue collector.—A. L. Morrison.

United States district attorney.—W. B. Childers.

United States marshal.—C. M. Foraker.

Deputy United States marshal.—J. J. Sheridan.

Registers and receivers land offices.—M. R. Otero, register, and Edward F. Hobart, receiver, Santa Fe; Emile Solignac, register, and H. D. Bowman, receiver, Las Cruces; Howard Leland, register, and George R. Guyer, receiver, Roswell; Edward Fox, register, and A. W. Thompson, receiver, Folsom, N. Mex.

District attorneys.—R. C. Gortner, Santa Fe; W. H. H. Llewellyn, Donna Ana and Otero counties; T. A. Finical, Albuquerque; R. D. Barnes, Silver City; Charles A. Spiess, Las Vegas; A. J. Nesbit, Roswell; S. Alexander, Socorro; J. Leahy, Raton, N. Mex.

Public printer.—J. D. Hughes.

Indian agent.—N. S. Walpole.

Court of private land claims.—Chief justice, Joseph R. Reed; justices, W. W. Murray, Henry S. Sluss, Thomas C. Fuller, and Wilber Stone; attorney, Matthew C. Reynolds; clerk, J. H. Reeder.

Officers of Territorial institutions.—The governor and superintendent of public instruction are the ex officio members of the board of regents of the following institutions: The University of New Mexico, the New Mexico College of Agriculture and Mechanic Arts, the New Mexico School of Mines, the New Mexico Insane Asylum, and the New Mexico Military Institute.

The University of New Mexico.—Regents: J. H. Wroth, Albuquerque; E. S. Stover, Albuquerque; Juan C. Armijo and F. W. Clancy, Albuquerque; H. L. Waldo, Las Vegas, N. Mex.

New Mexico College of Agriculture and Mechanic Arts.—Regents: G. A. Richardson, Roswell; A. A. Jones, Las Vegas; P. H. Curran, Las Cruces; R. E. Twitchell, Las Vegas, and L. Bradford Prince, Santa Fe, N. Mex.

The New Mexico Normal School, Silver City.—Regents: J. W. Fleming, Silver City; W. G. Ritch, Engle; J. A. Mahoney, Deming; Jo E. Sheridan, Silver City, and C. F. Grayson, Silver City, N. Mex.

Normal University of New Mexico, at Las Vegas.—Regents: A. B. Smith, Las Vegas; Charles Ilfeld, Las Vegas; M. W. Browne, Las Vegas; Frank Springer, Las Vegas, and Rev. George Selby, Las Vegas, N. Mex.

New Mexico School of Mines, Socorro.—Trustees: J. P. McGrorty, Deming; Joseph E. Smith, Socorro; Juan Jose Baca, Socorro; F. G. Bartlett, Magdalena, and C. T. Brown, Socorro, N. Mex.

New Mexico Military Institute, Roswell.—Regents: Joseph C. Lea, Roswell; Nathan Jaffa, Roswell; J. O. Cameron, Eddy; Charles Wilson, Roswell; Robert S. Hamilton, Roswell, N. Mex.

New Mexico Insane Asylum, Las Vegas.—Directors: O. L. Gregory, East Las Vegas; M. Brunswick, Las Vegas; J. W. Zollars, Las Vegas; Benigno Romero, Las Vegas, and N. T. Cordova, Las Vegas, N. Mex.

Territorial board of education.—Members: Governor, superintendent of public instruction, president of St. Michael's College, at Santa Fe, president of the University of New Mexico, president of the New Mexico College of Agriculture, Las Cruces, N. Mex.

Board of penitentiary commissioners.—F. H. Pierce, San Miguel County; Juan Navarro, Mora County; J. T. McLaughlin, Santa Fe County; J. Francisco Chaves, of Valencia County; Louis Baer, of Bernalillo County.

Capitol custodian committee.—Secretary of the Territory, ex officio, Santa Fe; Solomon Spiegleberg, Santa Fe, and Alfredo Hinojos, Santa Fe, N. Mex.

Territorial board of equalization.—First judicial district, Venceslao Jaramillo, Rio Arriba County; second judicial district, Alejandro Sandoval, Bernalillo County;

third judicial district, Numa Reymond, Donna Ana County; fourth judicial district, James S. Duncan, San Miguel County; fifth judicial district, John W. Poe, Chaves County.

Cattle sanitary board.—James F. Hinkle, Chaves County; William H. Jack, Grant County; E. C. Austen, Mora County; M. N. Chaffin, San Miguel County; Malaquias Martinez, Taos County, N. Mex.

Board of medical examiners.—John Tasher, Bernalillo County; Frank D. Bishop, Bernalillo County; J. H. Sloan, Santa Fe County; Joseph Cunningham, San Miguel County; W. R. Tipton, San Miguel County; T. P. Martin, Taos County, and George C. Bryan, of Otero County.

Board of dental examiners.—B. M. Williams, of San Miguel County; D. W. Manley, Santa Fe; L. H. Chamberlain, of Bernalillo; W. H. White, of Grant County, and A. A. Bearup, of Chaves County.

Members of board of pharmacy.—A. J. Fischer, Santa Fe County; W. C. Porterfield, Silver City; B. Ruppe, Albuquerque; E. G. Murphy, Las Vegas, and P. Moreno, Las Cruces.

Sheep sanitary board.—Solomon Luna, of Valencia County; W. S. Prager, of Chaves County, and Henry W. Kelly, of San Miguel County.

Members of bureau of immigration.—L. Bradford Prince, Santa Fe; Felipe Chavez, Belen; W. A. Hawkins, Alamogordo; Frank Springer, Las Vegas; A. C. Campbell, Eddy, N. Mex.

Members of the board of the Deaf and Dumb Asylum.—Benjamin M. Reed, Mrs. T. P. Gable, Mrs. F. P. Crichton, and F. Muller.

Register of the thirty-third legislative assembly.

COUNCIL.

President of the council: J. FRANCISCO CHAVES.

Politics.	Members.	Post-office.	District by counties.
D.	J. M. Valdez	Springer	Colfax, Mora, Union.
R.	J. S. Duncan	East Las Vegas	San Miguel, Guadalupe.
R.	Eugenio Romero	Las Vegas	Do.
R.	T. D. Burns	Parkview	Taos, Rio Arriba, and San Juan.
R.	Malaquias Martinez	Taos	Do.
R.	T. B. Catron	Santa Fe	Santa Fe.
R.	T. A. Finical	Albuquerque	Bernalillo.
R.	Thomas Hughes	do	Do.
R.	J. F. Chaves	Progreso	Valencia.
R.	H. O. Bursum	Socorro	Socorro and Sierra.
R.	J. A. Ancheta	Silver City	Doña Ana and Grant.
D.	G. A. Richardson	Roswell	Doña Ana, Grant, Chaves, Lincoln, and Eddy.

HOUSE OF REPRESENTATIVES.

Speaker of the house: MAXIMILIANO LUNA.

D.	T. B. Leib	Raton	Colfax.
R.	Bernardo A. Romero	Watrous	Mora.
R.	John R. Guyer	Clayton	Union.
R.	Rafael Gallegos	Las Vegas	San Miguel.
R.	Wm. H. Schultz	East Las Vegas	Do.
R.	Ramon de Herrera	Rociada	Do.
R.	Celso Baca	Eden	Guadalupe.
R.	Victor Ortega	Chimayo	Santa Fe.
R.	Wm. Kilpatrick	Madrid	Do.
R.	Pedro Sanchez	Taos	Taos.
R.	V. Jaramillo	El Rito	Rio Arriba.
R.	Frank Staplin	Taos	Taos, Rio Arriba, and San Juan.
R.	A. D. McIntosh	Cedar Hill	Do.
R.	Pablo Crespin	Albuquerque	Bernalillo.
R.	Marcelino Baca	Pena Blanca	Do.
R.	E. Guttierrez	Old Albuquerque	Do.
R.	Max. Luna	Los Lunas	Valencia.
R.	Roman A. Baca	San Mateo	Do.
R.	Pablo Trujillo	Polvadera	Socorro and Sierra.
R.	F. H. Winston	Fairview	Do.
R.	Marcial Valdez	Las Cruces	Doña Ana.
R.	R. P. Barnes	Silver City	Grant.
R.	W. H. H. Llewellyn	Lascruces	Doña Ana and Grant.
D.	J. E. Wharton	White Oaks	Lincoln, Chaves, and Eddy.

POPULATION.

The results of the census of 1900 in New Mexico have not yet been officially promulgated, but enough is known to make it certain that the figures will fall somewhat short of the estimates printed in my last annual report, and will consequently prove a disappointment to all friends of the Territory.

According to the census of 1890 the population of the Territory by counties was as follows:

Bernalillo	20,913
Colfax	7,974
Doña Ana	9,191
Grant	9,657
Lincoln	7,081
Mora	10,618
Rio Arriba	11,534
San Juan	1,890
San Miguel	24,204
Santa Fe	13,567
Sierra	3,630
Socorro	9,595
Taos	9,868
Valencia	13,876
Total	153,593

According to the estimates made last year, founded on registration lists, election returns, and information derived from apparently trustworthy personal sources, the population of the Territory by counties was given as follows:

Bernalillo	35,000
Chavez	5,000
Colfax	14,000
Doña Ana	12,000
Eddy	4,000
Grant	15,000
Guadalupe	7,500
Lincoln	9,000
Mora	17,000
Otero	3,500
Rio Arriba	19,000
Santa Fe	21,000
San Miguel	35,000
San Juan	5,000
Sierra	5,500
Socorro	19,000
Taos	13,000
Union	7,000
Valencia	14,000
Total	260,500

The Indian population is estimated as follows:

Pueblos	9,047
Jicarillas	832
Mescaleros	450
Navajos (Arizona and New Mexico)	15,000
Total	25,329

This makes a total population of the Territory, as estimated, of 285,829.

Semiofficial information makes it evident that the census of this year will show that all these estimates were too high and will credit the Territory with an aggregate population of less than 200,000. The only counties credited with gains over the census of 1890 are Bernalillo, Colfax, Doña Ana, Grant, Rio Arriba, San Juan, Socorro, and Taos. The population of the other old counties is shown to have remained nearly stationary for ten years, of course excepting the material changes occasioned by the creation of the new counties of Chaves, Eddy, Guadalupe, Otero, and Union out of territory embraced in a number of the old ones in 1890. There are substantial reasons for believing that an examination of the census enumeration of 1900 will not properly show the population of New Mexico except in the southern tier of counties, notably Grant, Doña Ana, Chaves, and Eddy, wherein the enumeration is believed to be very nearly correct.

The reasons for this belief deserve consideration. The total number of voters registered in New Mexico in 1898 was about 48,000, and the total number of votes cast for Delegate the same year was 35,843. No doubt is entertained that all the voters registered were actual residents of the Territory at the time, but for various reasons failed to vote. So it is fair to say that the registration of 1898 indicated a population of 240,000, exclusive of Indians, and it is known that the steady development of the mining, timber, stock-growing, agricultural, and horticultural industries of such counties as Bernalillo, Chaves, Colfax, Doña Ana, Eddy, Grant, Lincoln, Otero, Rio Arriba, San Juan, Socorro, and Taos has been more than sufficient to hold the population of the Territory at the number indicated by the registration of 1898. San Miguel County suffered a loss of population since 1890 by the segregation from its boundaries of Guadalupe County, but there are many evidences that this loss has much more than been made up by the influx of new residents during the past ten years. According to the census of this year the population of Santa Fe County has remained virtually stationary during the past decade. No one familiar with the constant growth of the agricultural and horticultural industries of the northern sections of the county and the corresponding development of the mining industry in the southern part, together with the signs of general prosperity witnessed on every hand, believes that the population of this county has not increased since 1890. Indeed, well-informed people do not believe that the other old counties of the Territory, particularly those peopled chiefly by natives, which are reported to have remained practically stationary in population during the past ten years, have been justly dealt with in the enumeration. It is of course true that the counties embracing the Cochiti, Santa Rita, Hanover, San Pedro, Red River, Elizabethtown, Amizett, Golden, Water Canyon, Magdalena, Organ, San Andreas, Hillsboro, White Oaks, and all the other flourishing mining districts of the Territory, and those that have recently witnessed the reclamation and cultivation of large areas of fertile land within their borders by means of new and extensive irrigation systems, have gained more in population than the other counties, but all the facts at command discredit an enumeration showing that any county in the Territory has either remained stationary or fallen off in population. It is well known that the native people of the counties where this kind of a showing is made by the census returns are not migratory, but live for generations in the same locality, and that the natural increase of population in these counties has been constant during the past ten years, while the death rate from smallpox and kindred diseases, which years ago wrought such sad havoc among the native people and the Indian tribes, has been reduced to insignificant proportions by modern methods of treatment.

So the conclusion is unavoidable that the census enumeration, which credits New Mexico with less than 200,000 population in 1900, does the Territory grave injustice. Unquestionably an accurate and complete enumeration would show that the Territory has a population of fully 225,000, exclusive of Indians, and that, counting the Navajoes, a majority of whom live within its boundaries, New Mexico has an Indian population of about 30,000, swelling the aggregate population to at least 255,000 people.

The burden of blame for this lamentable condition of affairs is not justly attributable to incapacity or willful negligence on the part of the supervisor and enumerators in this Territory, but much of it is due to the fact that both the census law and the general system promulgated from Washington were not sufficiently comprehensive and elastic to meet the peculiar requirements of sparsely settled mountain sections like many of those in New Mexico. A system of enumeration that will answer every desired purpose in the closely settled States of the East, where trolley cars and other cheap and quick means of transportation are at instant command, is not adjustable to the needs of a great Territory like New Mexico, where many of the counties are larger than some of the Eastern States, where settlements are frequently from 20 to 60 miles apart, where horses are in very many instances the only means of conveyance, and where expenses of all kinds are high. An idea of the task of some of the enumerators in New Mexico can be formed from the fact that one of them traveled nearly 1,000 miles to secure 600 names.

The truth is that many of the enumeration districts were too large, the time allowed for the work was too short, and the compensation allowed enumerators was not sufficient. Those in the three cities of Santa Fe, Albuquerque, and Socorro were paid at the rate of about 2½ cents per capita for the names enumerated, while those employed in the other districts of the Territory were paid at the rate of $5 per day for ten hours of actual work, and no allowances for expenses were made to either class. So, after paying for horse hire and horse feed, and defraying necessary personal expenses in making their long and toilsome official trips, the enumerators who did the most faithful and thorough work actually came out behind, while others, discovering that they were doing a good deal of hard work for nothing or at a loss, doubtless avoided some long and costly trips. The people of New Mexico have repeatedly and grandly demonstrated their patriotism and devotion to the United States in perilous times of war, promptly furnishing more than their quota of volunteer soldiers in both the civil war and the Spanish-American war, but they could not reasonably be expected to furnish volunteers to take the Federal census at a personal sacrifice of time and money. If a reasonable allowance had been made to the enumerators for actual expenses, the districts had been made smaller, and the time for doing the work had been extended long enough to meet the conditions already indicated, it is my candid judgment that the population of nearly every county in the Territory would have been shown to be much larger than the figures forwarded to Washington.

STATEHOOD.

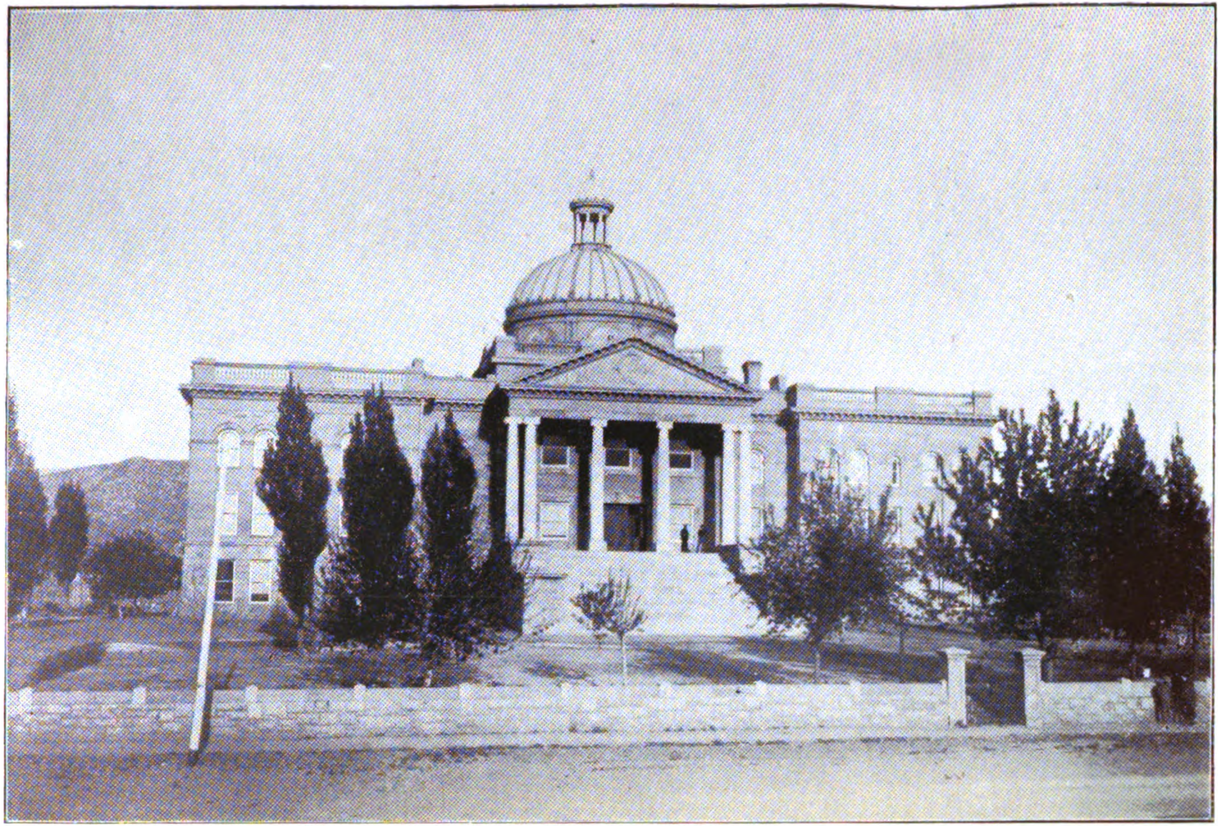
I would most earnestly renew my recommendation, made in my last report, with reference to the early admission of New Mexico as a State of the Union. The reasons given at that time for such admission are stronger now by reason of increased population, wealth, and intelligence. In that report I stated:

> It is unnecessary here to repeat the arguments which demonstrate conclusively that New Mexico is entitled to statehood. Her sheep and cattle industries, as already reviewed herein, her mineral wealth, her agricultural advantages, all stand as a guaranty that the new State of New Mexico will be amply able to meet the obligations which necessarily will be incurred in the change of government and her ability to sustain her own government permanently.
>
> The admission of New Mexico to the sisterhood of States would be beneficial alike to her people and the Federal Government. Self-government, which carries with it to every citizen the right to participate in the selection of the various officers intrusted with the management of the government, is a privilege few American citizens would willingly be deprived of, and one that all eagerly seek. Self-government would not only relieve the Federal Government of the enormous expense it is subjected to in the management of the present Territorial form of government, but would also relieve it of the responsibility of selecting the officers to manage the Territory's affairs.

Since that time our assessed value for taxation has increased and it is now more than $40,000,000, and constantly growing, while the population, caused by immigration, is also increasing rapidly. New Mexico sold more than 18,000,000 pounds of wool this year, which is 3,000,000 pounds more than ever before in her history, while her mines of copper and gold are being developed in a manner never known before. More capital has been invested in their development during the past year than previously, especially in Grant, Otero, Bernalillo, and Santa Fe counties. In this connection I quote the following from a Washington correspondent of the St. Louis Globe-Democrat:

> WASHINGTON, D. C., *September 11.*
>
> The War Department to-day made public the figures on the enlistments for the first ten regiments. Massachusetts furnished 833, which is the best showing, in proportion to population. The figures for Western and Southwestern States are as follows: Missouri, 639; Arkansas, 122; Colorado, 316; Illinois, 1,161; Indiana, 654; Iowa, 192; Kansas, 415; Texas, 548; Mississippi, 42; Nebraska, 171; Tennessee, 567; Arizona, 90; New Mexico, 121; Oklahoma, 124; Indian Territory, 109.
>
> The Northwestern States made a very bad showing. Wisconsin furnished but 98 men; Idaho, 15; Minnesota, 122; Montana, 30; North Dakota, 13; Oregon 80; South Dakota, 9. This is a total of 367 men for all the Northwestern States. Georgia alone furnished 446, and Texas 435. The smallest number of recruits secured from any one State was two, from Nevada.
>
> Missouri's showing was one of the best, considering the fact that no regiment of the first ten were rendezvoused there. The reports of recruiting for the ten regiments now being organized show that the Thirth-eighth, now being recruited at Jefferson Barracks, by Colonel Anderson, leads all the rest, with 485 men to its credit up to date. The nearest approach to this showing is made by the Forty-second Regiment, which is being organized at Fort Niagara, N. Y. The number of men secured for this regiment to date is 339. The total number of recruits secured for the ten new regiments to date is 4,790.

There is a slight error in the above article, where it is stated that "Massachusetts furnished 833, which is the best showing in proportion to population." This is not true for both New Mexico and Arizona did much better in proportion to the number of their people. New Mexico sent 121 and Arizona 90, or a total of 211. The census of 1890 gives Arizona's population as 59,696; New Mexico's 153,593, and Massachusetts' 2,238,943. New Mexico and Arizona, then, with a combined population of 213,289, or less than one-tenth of that of Massachusetts, furnished over one-fourth of the number sent by the State of the Pilgrim Fathers, of Adams, Webster, and Hoar.



Territorial Capitol Building, Santa Fe, N. Mex.

This is a comparison with the best in the extreme East. Now let us see what showing the two Territories make when compared with some of the sovereign States of the imperial West. Idaho, 15; Montana, 30; North Dakota, 13; South Dakota, 9; Nevada, 2; Wisconsin, 98. Total, 167, or just 44 less than that furnished by New Mexico and Arizona, whose people are "incapable of self-government." The States above mentioned have twelve United States Senators and sixteen members of the national House of Representatives. New Mexico and Arizona have two Delegates in Congress without the right to vote on any question because they represent constituents "incapable of self-government."

Why not statehood, then?

Under the treaty of peace concluded between the United States and Mexico February 2, 1848, known as the "Treaty of Guadalupe-Hidalgo," it was provided that "the territory acquired by the Mexican war and under that treaty should be incorporated in the union of the United States and be admitted at the proper time (to be judged by the Congress of the United States) to the enjoyment of all the rights of citizens of the United States according to the principles of the Constitution." Since that time California and Colorado have been admitted, and New Mexico and Arizona (which was formerly a county of this Territory) have been refused this privilege, and, I might say, rightly! For fifty years the Territory, through its legislature and by the recommendations of its governors, has been asking for this recognition guaranteed by solemn treaty stipulations. As long ago as 1850 New Mexico adopted a State constitution and elected a governor and two United States Senators, and its admission was only prevented by the adoption of the celebrated "compromise measures of that year." Twenty years afterward it held a constitutional convention, which formulated a most admirable constitution. In 1876 a bill to admit it to statehood, together with Colorado, passed both Houses of Congress and only failed to become a law by nonconcurrence in an amendment to that bill. Again, in 1889, there was a constitutional convention lasting nearly a month, composed of men of the highest character and ability, and their labors resulted in the presentation of a constitution which I have no hesitation in saying was the best formulated in the United States. Copies were laid before both Houses of Congress and several bills were introduced for its admission, and since that time each session of Congress has seen bills introduced by members of both political parties for the admission of New Mexico as a State, which have so far failed and for which failure no good reason has been given. Another bill for this purpose will be introduced at the coming session of Congress, and I urge its earnest consideration in behalf of the quarter of a million of people of this Territory.

The organization of civil government in the Territory of New Mexico was unique. The organic act establishing the Territory was approved September 30, 1850; the ratification of the treaty of peace between the United States and Mexico was held May 3, 1848, and proclamation thereof made July 4, 1848, just fifty years earlier than the capture of Santiago. But two years prior to that time the United States Government had established through its military authority a complete code of civil laws for the future Territory of New Mexico, which, at that time, consisted of the present Territory, all of Arizona, and the southern half of Colorado. On the 22d day of September, 1846, Brig. Gen. S. W. Kearney, in command of the army of invasion, issued and proclaimed to the people a "bill of rights," which is still retained on the statutes unchanged. On the same day he proclaimed "the Kearney

Code," which was reenacted by the legislature in 1865 and nearly all the provisions of which are still in force; and on the same day by virtue of his authority as brigadier-general, he appointed the following list of civil officers: Charles Bent, to be governor; Donaciano Vigil, to be secretary; Richard Dallam, to be marshal; Frank P. Blair, to be United States district attorney; Charles Blumner, to be treasurer; Eugene Leitzendorfer, to be auditor of public accounts; and Joab Houghton, Antonio Jose Otero, and Charles Beaubian, to be judges of the superior court. In his letter transmitting to the Adjutant-General a copy of these laws and list of appointments, General Kearney made the following statement:

> I take great pleasure in stating that I am entirely indebted for these laws to Col. A. W. Doniphan, of the First Regiment of Missouri Mounted Volunteers, who received much assistance from Private Willard P. Hall of his regiment. These laws are taken, part from the laws of Mexico, retained as in the original, a part with such modifications as our laws and Constitution made necessary; a part are from the laws of Missouri Territory, and a part from the laws of Texas, and also of Texas and Coahuila, a part from the statutes of Missouri, and the remainder from the Livingston Code.

The first governor, Bent, was assassinated the year after his appointment, at the pueblo of Taos, during what is known as the "Taos rebellion," which was suppressed with considerable loss of life by United States troops, out of which rebellion arose a number of prosecutions for treason, conducted by Frank P. Blair, United States attorney.

The civil law and the Kearney Code remained the rules of civil action down to 1876, when, by statute, the "common law as recognized in the United States of America," was adopted. This was the law of the land until the legislature of 1897 adopted a code of civil procedure.

The first legislative assembly of the Territory of New Mexico assembled in Santa Fe in December, 1847. The laws passed at that session were printed in a pamphlet, to which was added "Order No. 10," from the Headquarters of the Ninth Military Department, imposing a duty of 6 per centum on merchandise imported into the Territory. The authorization of these laws is printed in the same pamphlet, as follows:

SPECIAL ORDER, No. 5.

HEADQUARTERS NINTH MILITARY DEPARTMENT,
Santa Fe, N. Mex., February 5, 1848.

The foregoing legislative enactments of the Territory of New Mexico, having been duly reviewed by the commanding-general of the Territory, they are hereby approved, and they will be duly observed.

By order of brigadier-general:

STERLING PRICE.

W. E. PRINCE,
Aid-de-Camp and Acting Assistant Adjutant-General.

The first section of the General Orders No. 10, referred to on the title-page of the laws, is as follows:

> On and after the 1st day of February, 1848, the following regulations will govern the civil and military officers in the discharge of their respective duties: First, the officers named in the statutes as secretary of Territory, United States district attorney, and United States marshal are hereby abolished.

It is believed the above résumé of the methods of introducing American laws into conquered Spanish territory may be of interest at this time when similar conditions exist which may require similar action on the part of the Government.

Referring again to the constitutional convention held in 1889, I beg to submit its work herewith as an evidence of the character, ability, fairness, and broadness of the people who framed it, and who were representative New Mexicans. I submit it confidently, to compare favorably as a state document with any of the constitutions adopted by the older States, and earnestly invite your attention to the same as showing the qualities of mind and character of thought representative of the people of New Mexico upon this organic measure. This constitution was submitted to Congress at the session of 1890, and bills for the admission of New Mexico have been introduced by members of both political parties at each session of Congress since. They have failed to become laws, and no good reasons have been given for such failure.

Under the pledge contained in the platforms of the Republican and Democratic parties for 1900 another bill for admission of this Territory will be introduced at the coming session of Congress, and I once more urge most earnestly its favorable consideration on behalf of the patriotic citizens of New Mexico, who for half a century have been urging upon Congress this recognition of their rights.

The records of the civil war and the late war with Spain show that, in proportion to her population, New Mexico has furnished more troops to uphold the national flag than any other State or Territory in the Union. There have only been three of her laws disapproved by Congress during the half century in which she has been holding legislatures.

Her financial credit and standing is the best, her 4 per cent bonds commanding a premium, and $45,000 of outstanding bonds have been purchased and retired by the treasurer during the past year. Her public-school system is modeled on that of Illinois and Kansas, and she levies a direct Territorial tax for the support of these schools, varying from 1½ to 3 mills annually, under which the illiteracy has decreased during the ten years of the operation of this system more than 50 per cent.

As for the population, physical, financial, educational, and social conditions of the Territory, particular attention is called to the separate reports contained herein.

THE CONSTITUTION OF THE STATE OF NEW MEXICO, ADOPTED BY THE CONSTITUTIONAL CONVENTION HELD AT SANTA FE, N. MEX., SEPTEMBER 3-21, 1889.

PREAMBLE.

We, the people of New Mexico, grateful to Divine Providence for the liberties we enjoy, in order to perform a more perfect and substantial government and promote the general welfare, do ordain and establish this constitution.

ARTICLE I.—*Name and boundaries of the State.*

SEC. 1. The name of this State shall be "New Mexico."

SEC. 2. The boundaries of this State are and shall remain as follows: Commencing at the point where the thirty-seventh parallel of north latitude intersects the one hundred and third meridian of longitude west from Greenwich; thence running south along said one hundred and third meridian of longitude west from Greenwich to the point where it intersects the thirty-second parallel of north latitude; thence running west along said thirty-second parallel of north latitude to the Rio Bravo del Norte; thence running southerly with the channel of said river to the point where the parallel of thirty-one degrees forty-seven minutes north latitude crosses the same; thence running due west one hundred miles to a point; thence running south to the parallel of thirty-one degrees twenty minutes north latitude; thence running west along the said parallel of thirty-one degrees twenty minutes north latitude to the point where it intersects the thirty-second meridian of longitude west from Washington; thence running north along said thirty-second meridian of longitude west from Washington to the point where it intersects the thirty-seventh parallel of north latitude, at the southwest corner of the State of Colorado; and thence running east along said thirty-seventh parallel of north latitude to the point of beginning.

ARTICLE II.—*Bill of rights.*

SEC. 1. No hereditary distinction shall be granted; and no person holding any office under this State shall accept any office, title, emolument, or present from any king, prince, or foreign state.

SEC. 2. No person shall hold any office in this State who is not a citizen of the United States and of the State.

SEC. 3. No person shall be deprived of life, liberty, or property except by due process of law, nor shall private property be taken for public use without just compensation first made or secured.

SEC. 4. In all criminal prosecutions the accused shall have the right to appear and defend in person and by counsel; to be informed of all accusations; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses on his behalf, and a speedy public trial by an impartial jury of the county or district in which the offense is alleged to have been committed; and he shall not be compelled to give evidence against himself, nor shall any person be twice put in jeopardy for the same offense.

SEC. 5. No bill of attainder, ex post facto law, or law impairing the obligation of contracts shall be enacted.

SEC. 6. The privilege of the writ of habeas corpus shall not be suspended unless in case of rebellion or invasion the public safety may require.

SEC. 7. All persons shall be bailed by sufficient sureties, except for capital offenses, when the proof is evident or the presumption great. Excessive bail shall not be required, nor excessive fines imposed, nor cruel or unusual punishments inflicted.

SEC. 8. There shall be no imprisonment for debt except in case of fraud.

SEC. 9. Suit may be brought against the State in such manner and in such courts and in such cases as may be prescribed by law.

SEC. 10. All lotteries or sale of lottery tickets are prohibited.

SEC. 11. Provision shall be made by law for enrolling, reorganizing, and equipping the militia, provided no person shall be required to serve in the militia whose religious creed or discipline prohibits the bearing of arms, but such person shall render an equivalent for such exemption.

SEC. 12. The right of the people to keep and bear arms shall not be infringed.

SEC. 13. All rights vested and liabilities incurred shall remain the same as if this constitution had not been adopted, and the enumeration of certain rights shall not be construed to deny others retained by the people.

SEC. 14. The free exercise and enjoyment of religious profession and worship, without discrimination or preference, is hereby guaranteed, and no person shall be rendered incompetent to be a witness or a juror on account of his opinions on matters of religious belief; but the liberty of conscience hereby secured shall not excuse acts of licentiousness or justify polygamous practices or other acts inconsistent with morality or the peace or safety of the State, nor permit any person, organization, or association, directly or indirectly, to aid or abet, counsel or advise any person to commit bigamy or polygamy or any other crime. Bigamy and polygamy are forever prohibited.

SEC. 15. The citizens have a right to assemble in a peaceable manner for the common good or any other lawful purposes.

SEC. 16. Liberty of speech or of the press shall not be restrained; but for the abuse of such liberty every person shall be responsible.

SEC. 17. The military shall be in strict subordination to the civil power.

SEC. 18. The people shall be secure in their persons, houses, papers, and effects from unreasonable searches and seizures, and no warrant shall issue without probable cause, supported by affidavit particularly describing the place to be searched and the person or things to be seized.

SEC. 19. There shall be neither slavery nor involuntary servitude in this State otherwise than as a punishment for crime whereof the party shall have been duly convicted.

SEC. 20. No law of primogeniture or entailment shall ever be enacted, but the same is forever prohibited.

SEC. 21. Treason against the State shall consist only in levying war against it, adhering to its enemies, or giving them aid and comfort. No person shall be convicted of treason unless on the evidence of two witnesses to the same overt act, or on confession in open court.

SEC. 22. The right of trial by jury shall remain inviolate. The legislature shall pass such laws as may be necessary to regulate the same.

SEC. 23. No grand jury shall be summoned in any county unless the judge of the district court for such county shall direct the same by special order.

SEC. 24. No officer or person authorized by this constitution to appoint any person to office shall ever appoint to office any person who may be related to him by blood or marriage within the fourth degree of consanguinity according to the civil law rule of computation.

SEC. 25. The legislature shall pass liberal exemption laws; and there shall be exempt from levy and forced sale, under any process or order from any court of law or equity in this State, the lot or parcel of ground and the buildings thereon, owned by the debtor and occupied by him as a residence, he being a householder and having a family, to the value of not less than twenty-five hundred dollars.

SEC. 26. The natural right of the people to one day of rest in every seven is hereby acknowledged.

ARTICLE III.—*Distribution of powers.*

SEC. 1. The powers of the government shall be distributed in three departments, the legislative, the executive, and the judicial.

SEC. 2. The legislative, the executive, and the judicial departments of the government shall be separate and distinct; and neither shall exercise the powers properly belonging to either of the others. No person shall be invested with or exercise the powers of more than one department at the same time.

ARTICLE IV.—*The legislative department.*

SEC. 1. The legislative power shall be invested in a legislature composed of a senate and house of representatives, both to be elected by the people, and the session of such legislature shall be held at the seat of government of the State.

SEC. 2. Until otherwise provided by law the senate shall consist of twenty-four members and the house of representatives of forty-six members.

SEC. 3. The number of members of the legislature shall be fixed by law, but the members of the senate shall never be less than twenty-three nor exceed thirty-three, and the members of the house of representatives shall never be less than forty-six nor exceed ninety-nine, and the number of the members of the senate shall, after the first legislature, never be less than one-third nor more than one-half the number of members of the house of representatives, but each county shall have at least one representative.

SEC. 4. Senators shall be elected for four years, except as hereinafter provided, and representatives for two years.

SEC. 5. At the first session of the legislature after the adoption of the constitution the senators shall, immediately on organizing, be divided into two classes, designated by odd and even numbers consecutively from one upward. When any senatorial district has more than one senator, the names of such senators shall, as near as practicable, be equally divided between the odd and even numbers. Those of the one class shall hold their offices for two years, and those of the other class for four years, and the determination of the two classes shall be made by lot, after the names have been so numbered, so that one-half the senators, as near as practicable, may be elected biennially thereafter.

SEC. 6. No person shall be eligible to the legislature who is not a qualified elector in this State, and who has not been a citizen of New Mexico for at least two years prior to his election. Representatives must not be less than twenty-one years of age, and senators not less than twenty-five years of age at the time of election, and must be residents of the districts or counties from which they are elected.

SEC. 7. Members of the legislature shall receive for their services such compensation as may be fixed by law, but no law increasing their compensation shall apply to the members of the legislature enacting such law. Until otherwise provided by law they shall receive four dollars per day during the session and ten cents for each mile of necessary travel from their homes to the seat of government and returning, once for each session.

SEC. 8. The legislature shall meet regularly once in two years, on the first Tuesday after the first Monday in January next after the election in November; but the first legislature elected under this constitution shall meet on the first Monday after the expiration of ninety-days from the date of the passage and approval of an act of Congress admitting this State into the Union, unless the time for such meeting be fixed by said act. No regular session shall last more than sixty days, nor any special session more than twenty days. At special sessions no business shall be transacted except such as relates to the objects for which the legislature was convened, to be stated in the proclamation of the governor.

SEC. 9. A majority of either house shall constitute a quorum to do business, but a less number may effect a temporary organization, adjourn from day to day, and compel the attendance of absent members.

SEC. 10. Each house shall be the judge of the election and qualifications of its own members, and shall determine the rules of its proceedings. The senate shall, at the beginning and close of each regular session, and at such other times as may be necessary, elect one of its members president pro tempore to preside in the absence or in case of the impeachment of the lieutenant-governor, or when he shall hold the office of the governor. The house of representatives shall elect one of its members speaker. Each house shall choose its other officers, but the legislature shall not elect or appoint any officer except United States Senators.

SEC. 11. Each house shall have power to punish its members for disorderly behavior, or for absence without permission of the house, and by a vote of two-thirds of all its members to expel any member, but not a second time for the same offense; to enforce obedience to its process; and to punish by imprisonment, not extending beyond the session, any person not a member, for contempt or for disorderly behavior in its presence, obstructing any of its proceedings or any of its members or officers in the discharge of their duties; or for any assault, threatening, or abuse of a member for words spoken in debate; but such punishment for contempt or disorderly behavior shall not bar a criminal prosecution for the same offense.

SEC. 12. Members of the legislature shall in all cases, except treason, felony, violation of their oath of office, and breach or surety of the peace, be privileged from arrest during their attendance at the sessions of their respective houses, and in going to and returning from the same. And no member, for words spoken in any speech or debate, or for any vote he may give as such member, shall be questioned in any other place.

SEC. 13. No member of the legislature shall, during the term for which he was elected, be appointed or elected to any civil office which has been created, or the emoluments thereof have been increased, during such term; nor receive any civil appointment to any office within the State; nor shall any member of the legislature, during the term for which he was elected, or within one year thereafter, be interested directly or indirectly in any contract with the State, or any county thereof, authorized by any law passed during such term.

SEC. 14. Each house shall keep a journal of its proceedings and shall publish the same. Neither house shall, without the consent of the other, adjourn for more than two days, nor to any other place than that where the two houses are sitting; and on the day of final adjournment they shall adjourn at twelve o'clock noon.

SEC. 15. The enacting clause of all bills shall be, "Be it enacted by the Legislature of the State of New Mexico." Any bill may originate in either house of the legislature. No bill shall become a law unless it has been printed and read three different times, not more than two of which shall be on the same day, and the third of which readings shall be in full.

SEC. 16. Each law, except general appropriation bills, shall embrace but one subject, which shall be expressed in the title; but if any subject which is not so expressed in the title shall be embraced in any law, such law shall be void only as to so much thereof as shall not be so expressed.

SEC. 17. General appropriation bills shall embrace nothing but the appropriations for the expenses of the executive, legislative, and judicial departments of the State, interest on the public debt, for public schools, and for continuing expenses required by existing laws; but if any such bill contain any other matter, the whole law shall not be thereby rendered void, but only so much thereof as is hereby forbidden shall be considered of no effect. All other appropriations shall be made by separate bills, each embracing but one subject.

SEC. 18. No bill shall become a law except by a vote of a majority of all the members elected to each house, nor unless on its final passage the vote be taken by ayes and noes, and the names of those voting entered on the journal.

SEC. 19. The presiding officer of each house shall, in the presence of the house over which he presides, sign all bills and joint resolutions passed by the legislature, and publicly announce the title of the same as signed; and the fact of such signing shall be entered in the journal.

SEC. 20. No law shall be enacted except by a bill adopted by both houses, and no bill shall be so altered or amended on its passage through either house as to change its original purpose.

SEC. 21. No law or section of the law shall be amended by reference only to its title or number, but such law or section shall be set forth at full length as amended.

SEC. 22. The legislature shall not pass special or local laws on any of the following subjects, that is to say:

Assessment and collection of taxes.

Exemptions from taxation.

Laying out, opening, working, altering or vacating roads, highways, streets or public squares;

Changing the names of persons or places;

Incorporating cities, towns and villages;

Locating or changing county seats;

Appointment or election, jurisdiction, duties, or compensation of city, town, village, or precinct officers;

Regulating the practice of courts of justice;

Changing the venue in civil or criminal cases;

Changing the law of descent;

Granting divorces;

Summoning and impaneling jurors;

Common schools;

Affecting estates of minors or other persons under legal disability;

Claims or accounts against the State or any municipality existing therein;

Refunding money paid into the treasury;

Releasing persons from any debt or obligation to the State, or any municipal or quasi-municipal corporation therein;

Granting or amending charters to corporations, or licensing toll roads or bridges; provided, however, that nothing in this paragraph contained shall prohibit the amendment of charters of municipal corporations heretofore created by any special law of the territorial legislature;

County, city, town, village, precinct, or district indebtedness;

Legitimizing children;

Creating, increasing, or decreasing fees, percentages, or allowances of public officers;

But upon all subjects above mentioned, and in all other cases where a general law can be applicable, all laws shall be general, and no special law shall be enacted in any case which is provided for by an existing general law, or where the relief sought can be had in any court in the State.

SEC. 23. The legislature shall not grant to any corporation or corporations, nor to any person or persons, any rights, privileges, immunities, or exemptions which shall not upon the same terms belong equally to all persons.

SEC. 24. In all elections and confirmations to be made by the legislature, or either house thereof, the members shall vote viva voce, and their votes shall be entered in the journal. The sessions of each house, and of the committee of the whole, shall be open.

SEC. 25. No bill for the appropriation of money, except for the ordinary expenses of the government, shall be introduced after the fiftieth day of the session, except by unanimous consent of the house in which it is introduced.

SEC. 26. No public act shall take effect until the expiration of sixty days from the end of the session at which the same may be passed, unless, in case of public emergency, which shall be expressed in the act, the legislature shall in the same act otherwise direct.

SEC. 27. The power of impeachment shall be vested in the house of representatives, but a majority of all the members of the house shall concur to direct an impeachment. All impeachments shall be tried by the senate, and when organized for the purpose of such trial the chief justice of the supreme court of the State shall preside, unless he is impeached or otherwise disqualified, when the senate shall elect a presiding officer, and no person shall be convicted except upon the vote of two-thirds of the senators elected. Any person convicted shall be removed from office, and may, in addition, be forever disqualified from holding any office or voting in this State; but such trial shall not be a bar to a criminal prosecution or civil action.

SEC. 28. The legislature shall pass all laws necessary to carry into effect the provisions of this constitution.

ARTICLE V.—*Executive department.*

SEC. 1. The executive department shall consist of a governor, lieutenant-governor, secretary of state, auditor of public accounts, state treasurer, attorney-general, and superintendent of public instruction, each of whom shall be elected by the people, and hold his office for the term of two years, beginning on the first Tuesday after the first Monday of January next after his election; provided, that the terms of office of those chosen at the first election held under this constitution shall begin on the day appointed for the first meeting of the legislature as hereinafter provided. There shall also be a state librarian. The officers of the executive department, excepting the lieutenant-governor, shall during their terms of office reside at the seat of government, where they shall keep the public records, books, and papers. They shall perform such duties as are prescribed by this constitution and by law.

SEC. 2. No person shall be eligible to the office of governor or lieutenant-governor who has not been a citizen of the United States for nine years, or who has not attained the age of thirty years, and who has not been a resident of New Mexico for two years next preceding his election.

SEC. 3. Neither the governor nor the lieutenant-governor shall hold or exercise any office under the United States or under any other State or government.

SEC. 4. The governor shall be commander-in-chief of the military forces of the State. He shall have power to convene the legislature or the senate only on extraordinary occasions. He shall communicate to the legislature at each session the condition of the State, and make such recommendations as he shall deem expedient. He shall transact all necessary business of the State with officers of the government, or with other States, or with the United States, and may require information or opinions in writing from the officers of any executive department on any subject relating to the duties of their respective offices; and upon any question of law connected with his official duties he may require also the opinion in writing of the attorney-general. He shall take care that the laws are faithfully executed and the public peace preserved. He shall at stated times receive for his services a compensation to be fixed by law.

SEC. 5. The governor shall nominate, and, by and with the advice and consent of the senate, a majority of all the senators concurring, appoint all officers whose offices are created by this constitution, or which may be created by law, and whose appointments are not herein otherwise provided for, and no such officer shall be appointed or elected by the legislature or either branch thereof. Each officer so appointed shall hold his office until the beginning of the next regular session of the senate and until his successor is qualified; but he shall not hold over beyond the expiration of such session, nor shall he be then during the recess appointed to fill a vacancy in his office arising from the failure of the governor to nominate, or of the senate to confirm any person in his stead. A person once rejected by the senate shall not be renominated by the governor for the same office during the same session, except at the request of the senate, nor appointed to such office during the recess thereafter. Any vacancy in any office which is to be filled by appointment by and with the advice and consent of the senate, which may exist during the recess of the senate, shall be filled by the governor by appointment, to expire with the termination of the next session of the senate; but no person so appointed to fill a vacancy shall be appointed a second time to fill a vacancy in the same office. It shall be the duty of the governor, under such regulations as may be prescribed by law, to remove from office for gross neglect of duty, or for corrupt conduct in office, any officer in the State, except legislative and judicial officers.

SEC. 6. The governor shall have the power to remit fines and to grant reprieves, commutations, and pardons after conviction, except in cases of impeachment or in cases of persons punished by the legislature or by either house thereof, but he shall set forth in writing fully the grounds of all remissions, reprieves, commutations, and pardons, and report the same to the legislature at the next session.

SEC. 7. Every bill which shall have passed the senate and house of representatives shall before it becomes a law be presented to the governor; if he approves he shall sign it; but if not he shall return it with his objections to the house in which it originated, which house shall enter the objections at large on its journal, have the bill read and proceed to reconsider it. If, after such reconsideration, two-thirds of the members present shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered, and if approved by two-thirds of the members present it shall become a law; but in all such cases the vote of each house shall be determined by ayes and noes; and the names of persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the governor within three days, Sundays excepted, after it shall be presented to him, the same shall become a law in like manner as if he had signed it, unless the legislature by adjournment prevents its return, in which case it shall not become a law, unless the governor shall sign and file it with the secretary of state within three days after such adjournment. When any bill appropriating money from the public treasury shall have passed both houses and be presented to the governor he shall have power to approve the same in whole or in part, and in the manner hereinbefore set out may return to the house in which it originated a copy of any part or parts of such bill which he may disapprove, with his objections thereto, when like proceedings shall be had with like effect as in the case of any bill returned by the governor as a whole.

Sec. 8. In case of a vacancy in the office of governor, or of his impeachment, or of inability on the part of the governor to discharge the duties of his office, the powers, duties, and emoluments of the office for the residue of the term, or until the disability shall be removed, shall devolve upon the lieutenant-governor. The lieutenant-governor shall be president of the senate, but shall vote only when the senate is equally divided. If there be no lieutenant-governor, or if the lieutenant-governor shall from any of the causes above specified become incapable of performing the duties of the office of governor, the president of the senate shall act as governor until the vacancy is filled or the disability removed; and if the president of the senate, from any of the above-named causes, shall become incapable of performing the duties of governor, the same shall devolve upon the speaker of the house of representatives.

Sec. 9. There shall be a seal of the State, which shall be kept by the secretary of state and shall be called the "Great Seal of the State of New Mexico," and the seal of the Territory of New Mexico shall be the seal of the State until otherwise provided by law.

Sec. 10. The governor shall issue commissions, signed by him and countersigned by the secretary of state and sealed with the great seal, to all State and district officers and to such other officers as he may be by law required to commission.

Sec. 11. Each of the officers named in this article shall receive for his services a salary to be fixed by law. It shall be the duty of all such officers to collect in advance all fees prescribed by law for services rendered by them severally, and pay the same into the State treasury.

Sec. 12. Neither the State treasurer nor auditor of public accounts shall hold office for two consecutive terms, nor shall either immediately succeed the other in office.

Article VI.—*The judicial department.*

Sec. 1. The judicial power of this State shall be vested in a supreme court, district courts, probate courts, justices of the peace, and such other courts inferior to the supreme court, including courts of arbitration, as the legislature from time to time may establish.

Sec. 2. The supreme court, except as otherwise provided in this constitution, shall have only appellate jurisdiction in all actions, suits, and other proceedings. It shall have a general supervisory control over all inferior courts, under such regulations and limitations as may be prescribed by law.

Sec. 3. The supreme court and the justices thereof shall have power to issue all writs and process necessary to secure justice to parties, and to the exercise of its jurisdiction and the enforcement of its own judgments and decrees, and to hear and determine the same; and the exercise of such jurisdiction shall be regulated by law; but in no case removed into said court shall trial by jury or the taking of evidence on any question raised by the record ever be allowed.

Sec. 4. The supreme court shall consist of three justices, one of whom shall be styled the chief justice; but after ten years from the time when this constitution goes into effect the number may be increased by law to five. Their terms of office shall be six years, except those of the first three justices, of whom one shall hold office for two, one for four, and one for six years. A majority of the members of the court shall constitute a quorum.

Sec. 5. No person who is less than thirty or more than seventy years of age shall hold the office of justice of the supreme court, nor unless he has been a member of the bar for six years and a citizen of the United States and a resident of New Mexico for two years. Any such justice or any judge of a district court may be removed from office only after impeachment and conviction thereon for corruption, official malfeasance or nonfeasance, willful neglect of duty, or incompetency; but pending such impeachment he shall exercise none of the duties of his office.

Sec. 6. The justices of the supreme court shall be appointed by the governor, by and with the advice and consent of the senate, and their salaries shall be fixed by law, and shall not exceed five thousand dollars each per year. No two of such justices shall be appointed from residents of the same judicial district. The justice having the shortest time to serve shall be the chief justice.

Sec. 7. The supreme court shall hold at least one term in each year at the seat of government, but the legislature may from time to time direct that said court shall hold additional terms in any one or more judicial districts.

SEC. 8. The justices of the supreme court shall, by virtue of their office, be conservators of the peace throughout the State.

SEC. 9. The supreme court shall appoint a clerk thereof, who shall hold his office six years, subject to removal by the court. His compensation shall be fixed by law, and his duties shall be prescribed by law and by the rules of the supreme court.

SEC. 10. The governor shall designate so many district judges, to act as justices of the supreme court *ad interim*, as shall be necessary to constitute a quorum, whenever from any cause, in any matter pending therein, a majority of the justices thereof shall be unable or disqualified to act.

SEC. 11. Until otherwise provided by law, the State is hereby divided into four judicial districts, which shall be the first, second, third, and fourth districts.

The first district shall be composed of the counties of Santa Fe, Rio Arriba, San Juan, and Taos.

The second district shall be composed of the counties of Bernalillo, Valencia, and Socorro.

The third district shall be composed of the counties of Grant, Doña Ana, Sierra, and Lincoln.

The fourth district shall be composed of the counties of San Miguel, Mora, and Colfax.

SEC. 12. In each judicial district one judge of the district court shall be elected by the qualified electors thereof. His term of office shall be four years, and his salary shall be prescribed by law, not to exceed three thousand dollars per annum.

SEC. 13. Any person to be eligible to the office of judge of the district court shall be a citizen of the United States, a permanent resident of the district in which he is elected, at least thirty years of age, a practicing lawyer in good standing or a judge of the supreme or district court in the Territory or State of New Mexico for at least two years next preceding his election, and shall have been a practicing lawyer in some court of record in the United States for at least four years next preceding his election, or his service upon the bench of any court of record in the United States, when added to the time he shall have so practiced law, shall be equal to such four years.

SEC. 14. There shall be a district court for each county. The district courts shall have general unlimited chancery and common-law jurisdiction, which shall be kept distinct, and shall have appellate jurisdiction in all cases and matters decided in the probate courts and by justices of the peace, under such regulations as may be prescribed by law, and shall have a general control over all inferior courts.

SEC. 15. The district courts and judges thereof in vacation shall have power to issue writs of habeas corpus, mandamus, quo warranto, certiorari, injunction, prohibition, and all other original and remedial writs necessary to the exercise of their jurisdiction, with authority to hear and determine the same. They shall be conservators of the peace throughout the State.

SEC. 16. The time of holding the district courts shall be as provided by law, but at least two terms thereof shall be held annually in each organized county, except in such counties as may be attached for judicial purposes to other counties wherein such courts are held. Special terms of said courts may be had under such regulations as may be prescribed by law.

SEC. 17. Writs of error and appeals shall be allowed from the decisions of the district courts to the supreme court, under such regulations as shall be prescribed by law.

SEC. 18. Provision shall be made by law for holding district courts when from any cause the judge shall fail to attend, or if in attendance can not properly preside; and the district judges may be by law authorized to act for one another in the discharge of their official duties in such manner and under such circumstances as may be fixed by law.

SEC. 19. There shall be a clerk of the district court in each county wherein a term is held, who shall be elected by the qualified electors thereof at the same time and for the same term as herein provided for the judges of the district courts. His duties and compensation shall be prescribed by law. Such clerk shall keep the records of the district court at the county seat and be the custodian thereof and of the seal of said court.

SEC. 20. There shall be a probate court for each county, the jurisdiction of which shall be prescribed by law, and the judge thereof shall be elected by the voters of the county. His term of office shall be two years, and his qualifications, duties, and compensation shall be determined by law.

SEC. 21. A code of procedure and practice for the probate courts shall be prescribed by law, and until such code is prescribed the supreme court may make rules not inconsistent with this constitution and with law for the guidance of such courts.

SEC. 22. A clerk of the probate court for each county shall be elected by the qualified voters thereof, and his duties shall be prescribed by law.

SEC. 23. Regular terms of the probate courts shall be prescribed by law, but they shall always be open for the transaction of business, except on legal holidays and nonjudicial days.

SEC. 24. Any matter pending in a probate court which the judge thereof shall be disqualified to try or hear shall be transferred to the district court for the same county for trial or hearing.

SEC. 25. The tenure of office and jurisdiction of justices of the peace shall be regulated by law; but they shall not have jurisdiction of cases involving the title to land, or of cases where the amount involved, exclusive of costs, is over one hundred dollars, or of cases of felony, except as committing magistrates.

SEC. 26. The supreme, district, and probate courts shall be courts of record.

SEC. 27. The legislature shall provide by law for an appropriate seal for each of said courts of record.

SEC. 28. All process shall run in the name of the State of New Mexico, and all criminal prosecutions shall be conducted in the name and by the authority of the same. All indictments shall conclude "against the peace and dignity of the State of New Mexico."

SEC. 29. It shall be the duty of the legislature to provide for a general system of practice in all the courts of the State.

SEC. 30. The legislature may limit the power of the courts to punish for contempt.

SEC. 31. No justice or judge of any court of record shall, during his service as such justice or judge, practice law in any of the courts of this State or of the United States, or give advice in any case which may come before him.

SEC. 32. Provision may be made by law for the election of judicial officers at times different from the general elections.

SEC. 33. In case of a vacancy occurring in the office of judge of any of the courts of record to be elected under this constitution, from death, resignation, or otherwise, the governor shall fill the vacancy for the unexpired term by appointment, provided such unexpired term does not exceed one year. If such unexpired term shall exceed one year, then, to fill such vacancy, the governor, by proclamation, shall call a special election therefor, in the proper district or county; and in that case that part of the unexpired term preceding the qualification of the judge so elected at said special election shall be filled by the governor by appointment. The governor shall issue commissions to all justices or judges of courts elected or appointed.

SEC. 34. There shall be district attorneys, whose number, duties, jurisdiction, qualification, tenure of office, and compensation shall be determined by law. Each of said attorneys shall be elected by the people of the district or counties within which he is to act.

ARTICLE VII.—*Elective franchise.*

SEC. 1. The qualifications of voters shall be ascertained and declared by law; but no person shall have the right to vote at any election who is not a citizen of the United States and has not lived within the State at least twelve months before the day of election.

SEC. 2. No religious test shall be required for any office or for any vote at any election.

SEC. 3. Voters shall in all cases, except for treason, felony, or breach of the peace, be privileged from arrest during their attendance at elections, and in going to and returning therefrom.

SEC. 4. No person shall be permitted to vote at any election in the State, nor to hold a seat in the legislature nor any office in this State, who shall in due course of law have been convicted of bribery or corruption in connection with the election or appointment of any person to office.

SEC. 5. No person shall be permitted to vote at any election, or be eligible to any office in the State, or to a seat in the legislature, who shall in due course of law, in either civil or criminal proceedings, have been adjudged guilty of a failure to account for or pay over according to law any money for which he may be liable as a collector or holder of public money until he shall have so accounted for or paid over such money.

SEC. 6. Any person who may hereafter be engaged in a duel, either as principal or accessory before the fact, shall not be permitted to vote at any election, and shall be disqualified from holding a seat in the legislature or any office within the State.

SEC. 7. No person shall be deemed to have gained or lost residence by reason of presence or absence while employed in the service of the United States or of the

State, nor while a student at any school, nor while kept or confined in any public institution or prison.

SEC. 8. The legislature shall regulate by law, not inconsistent with this constitution, all matters relating to officers of election, the manner of conducting elections, and making returns thereof, and shall pass laws to prevent intimidation, disorder, or violence at the polls, and all corruption, fraud, or bribery in connection with elections or voting.

SEC. 9. All elections by the people shall be by ballot, and the person or persons who shall receive the highest number of votes shall be declared elected.

SEC. 10. The secrecy of the ballot shall be kept inviolate, except in cases of contested elections.

SEC. 11. The general election shall be held once in two years, on the first Tuesday after the first Monday in November in the even numbered years; and all terms of office of persons elected at such election shall begin on the first Tuesday after the first Monday of January next following.

SEC. 12. No election of city, town, or precinct officers shall be held at the same time as the general election.

SEC. 13. No person shall hold more than one lucrative office at the same time; but no appointment in the militia, nor the office of notary public, shall be considered a lucrative office.

SEC. 14. No member of either House of Congress, nor person holding any office under the United States, except postmasters below the second class and commissioners of the United States courts, shall be appointed to or hold any office in this State, or be eligible as a member of the legislature.

ARTICLE VIII.—*Apportionment.*

SEC. 1. The legislature at its first session after the census of 1890 made by the United States, and at its first session after each subsequent census by the United States, shall divide the State into senatorial districts and apportion the senators to such districts, and the representatives to the several counties, using said census as the basis for such apportionment, and such apportionment shall take effect at the next general election held thereafter.

SEC. 2. The representatives shall be apportioned by law to the counties after each census taken by the United States, as follows:

The basis of representation shall be ascertained by dividing the whole population of the State, excluding Indians not taxed, by the number of which the house is to consist and rejecting any fraction resulting from such division. The number of representatives to which each county is entitled shall be ascertained by dividing its population by the basis of representation aforesaid, excluding the fractional remainder, if any; and the additional representatives necessary to make up the number of which the house is to consist shall be then assigned to those counties which would otherwise have the largest fractions unrepresented. The senators shall be apportioned to the senatorial districts as nearly as practicable in the same manner.

SEC. 3. Until the State shall be divided into senatorial districts as provided in section 1 of this article said districts shall be constituted and numbered as follows:

The county of Colfax shall constitute the first district, which shall be entitled to one senator.

The county of Mora shall constitute the second district, which shall be entitled to one senator.

The counties of Mora and Colfax shall jointly constitute the third district, which shall be entitled to one senator.

The county of Taos shall constitute the fourth district, which shall be entitled to one senator.

The county of Rio Arriba shall constitute the fifth district, which shall be entitled to two senators.

The county of Santa Fe shall constitute the sixth district, which shall be entitled to two senators.

The county of San Miguel shall constitute the seventh district, which shall be entitled to four senators.

The county of Bernalillo shall constitute the eighth district, which shall be entitled to three senators.

The county of Valencia shall constitute the ninth district, which shall be entitled to one senator.

The county of Socorro shall constitute the tenth district, which shall be entitled to one senator.

The county of Sierra shall constitute the eleventh district, which shall be entitled to one senator.

The county of Grant shall constitute the twelfth district, which shall be entitled to one senator.

The county of Dona Ana shall constitute the thirteenth district, which shall be entitled to one senator.

The counties of Dona Ana and Grant shall jointly constitute the fourteenth district, which shall be entitled to one senator.

The county of Lincoln shall constitute the fifteenth district, which shall be entitled to one senator.

The counties of San Juan and Bernalillo shall constitute the sixteenth district, which shall be entitled to one senator.

The counties of Socorro, Valencia, and Lincoln shall constitute the seventeenth district, which shall be entitled to one senator.

SEC. 4. Until an apportionment of the representatives shall be made in accordance with section 1 of this article, they shall be divided among the several counties of the State as follows:

The county of Colfax shall have three representatives; the county of Mora three; the county of Taos two; the county of Rio Arriba three; the county of San Juan one; the county of Santa Fe four; the county of San Miguel nine; the county of Bernalillo six; the county of Valencia two; the county of Socorro three; the county of Sierra two; the county of Grant three; the county of Dona Ana three, and the county of Lincoln two.

SEC. 5. One Representative in the Congress of the United States shall be elected from the State at large, at the first election under the constitution, and thereafter in such manner as may be prescribed by law. When a new apportionment shall be made by Congress the legislature shall divide the State into Congressional districts accordingly.

ARTICLE IX.—*Education.*

SEC. 1. Provision shall be made by law for the establishment and maintenance of a uniform system of public schools, which shall be open to, and sufficient for the education of, all the children in the State, and shall be under the absolute control of the State, and free from sectarian or church control; and no other or different schools shall ever receive any aid or support from public funds. No sectarian tenet, creed, or church doctrine shall be taught in the public schools.

SEC. 2. The principal of all funds arising from the sale or other disposal of lands or other property granted, donated, or intrusted to this State for educational purposes, or coming to the State by escheat, shall constitute a permanent school fund which shall be forever preserved inviolate and undiminished, and the income therefrom shall be faithfully applied to the objects of the original grants, donations, or trusts, subject to the provisions and restrictions of this constitution, and when not inconsistent with such objects, shall be used for common-school purposes throughout the State in proportion to the number of children of school age. But no part of such funds, nor of any other funds created or authorized by law for educational purposes, shall ever be applied toward the maintenance, support, or aid of any school or other institution in the management of which any religious or other sect has any part, or which is not under the absolute control of the State. The provisions of this and the last preceding section are hereby declared to be irrevocable without the consent of the United States and the people of this State.

SEC. 3. The control, management, and direction of all public schools, and of all educational and school funds, land, and other property belonging to the State, or any municipality or district therein, or at its disposal, shall, under such regulations as may be prescribed by law, be vested in the State board of education and public lands. The legislature may provide for district or other school officers, subordinate to said board. The State treasurer shall be the custodian of all educational and school funds, except those arising in each county from taxation and fines, of which the county treasurer shall be the custodian.

SEC. 4. The principal of the permanent school fund shall be invested in bonds of the United States, or the duly authorized bonds of the State or territory of New Mexico, or of any county therein whose indebtedness at the time shall not exceed five per centum of its assessed valuation. In case sufficient of the above mentioned State, Territorial, or county bonds can not be obtained, the legislature, by a vote of three-fourths of the members elected to each house, may change the mode of investing said funds. All losses from such fund, however occurring, shall be reimbursed by the State.

SEC. 5. The legislature shall provide by law for levying and collecting taxes for school purposes, as follows: First. An annual tax of not less than two and one-half mills on the dollar of assessed valuation of all the property in each county, to be distributed throughout the county in proportion to the number of children, for the maintenance of schools and the construction of schoolhouses. Second. An annual tax not exceeding two and one-half mills on the dollar of assessed valuation upon all the property in any incorporated town or city, or any school district having not less than one thousand inhabitants, to be levied according to the vote of a majority of the payers of taxes on taxable property therein, for the maintenance of schools and the construction of schoolhouses within such town, city, or district.

SEC. 6. Provision shall be made by law for teaching the principles of the constitutions of the United States and of this State in the common schools. All teachers in the public schools shall be citizens of the United States, properly qualified, and persons of good moral character.

SEC. 7. No religious test shall ever be required of any person as a condition of admission into any public educational institution of the State, either as teacher or student; and no teacher or student of any such institution shall ever be required to attend or participate in any religious service whatever; nor shall any distinction or classification of pupils be made on account of race or color.

SEC. 8. The legislature shall provide by appropriate legislation for supplying the pupils of the public schools with the necessary text-books at public expense, under such restrictions as shall prevent such text-books being changed oftener than once in five years. It shall also pass laws to prohibit any teacher, director, or other officer being interested in the sale of books, apparatus, or furniture used in the public schools.

ARTICLE X.—*Public lands.*

SEC. 1. All lands granted to the State by Congress, all lands acquired by gift, grant, or devise, shall be public lands of the State to be disposed of as hereinafter provided for the respective purposes of such gifts, grants, or devises; and none of such lands, nor any estate or interest therein, shall ever be disposed of except in pursuance of general laws providing for such disposition, nor unless the full market value of the estate or interest disposed of, to be ascertained in such manner as may be provided by this constitution and laws in conformity herewith, be paid to the State; nor shall any lands which the State may hold by grant from the United States be disposed of except in the manner and for at least the price prescribed in the grant thereof, if the same are so prescribed, without the consent of the United States.

SEC. 2. The governor, secretary of state, auditor of public accounts, attorney-general, and superintendent of public instruction shall constitute a board which shall be styled "the State board of education and public lands," and in addition to the powers and duties in this constitution elsewhere provided, and subject to the provisions of this article and laws passed in pursuance thereof, shall have control of all such public lands and of the appraisement, sale, rental, and disposal thereof, and the investment of the funds arising therefrom, under the same limitations as those provided in relation to the school fund.

SEC. 3. The proceeds of all such lands or of other property received by the State in like manner as such lands, shall constitute and remain permanent funds, of which the interest and income, but no part of the principal, shall be applied to the specific objects of the original gifts, grants, or devises. The principal of each fund shall be preserved inviolate and undiminished, and no part of any specific fund shall be diverted from its designated object, or transferred to any other. The State shall make good all losses from any of such funds.

SEC. 4. The public lands of the State shall be classified by the said board of education and public lands as follows:

1. Lands which are valuable only for grazing purposes.
2. Lands which are principally valuable for timber, salt lakes or springs, stone or other minerals upon them.
3. Agricultural lands.
4. Lands within the limits of any town or city, or within three miles of such limits.

Any of such lands shall be reclassified whenever by reason of increased facilities for irrigation or otherwise they may be subject to a different classification.

SEC. 5. The State board of education and public lands shall cause all the lands of the different classes to be appraised by sworn appraisers, part of whom at least shall be residents of the county wherein the lands to be appraised are situate, and after all such lands have been appraised said board shall designate for sale such lands as they may think most advantageous for the public interest to be sold. But not more than one-fourth or the lands belonging to any one of the said classes shall be sold during any period of five years, commencing with the date on which this constitution goes into effect.

SEC. 6. All sales of school lands shall be held at the county seat of the county in which the land to be sold is situate, after sixty days' advertisement of the same in a newspaper of general circulation in such county, and one at the seat of government. Such sale shall be at public auction to the highest bidder, upon such terms of payment as the said board may deem best for obtaining the best price, but no lands shall be sold for less than their appraised value, and the interest on any deferred payments shall not be less than 6 per cent per annum, payable annually. All lands designated for sale and not sold within two years after the appraisement shall be reappraised before they are sold. The State shall in no case part with the title to any lands until full payment has been made therefor.

SEC. 7. The lands of the fourth class shall be sold in subdivisions of not more than five acres each; those of the first class in tracts not exceeding one section; and those of the smaller classes in the smallest subdivisions into which they may have been divided, but in no case shall they be sold in larger tracts than 160 acres.

SEC. 8. The legislature may provide by law for leasing the public lands for periods not exceeding five years and in quantities not exceeding one section to any one person or company; but such leasing shall be to the highest bidder at public auction, after notice as heretofore provided in case of sale. All rents shall be paid annually in advance.

SEC. 9. No law shall ever be enacted granting any privileges by reason of the occupation, cultivation, or improvement of any public lands of the State subsequent to the survey thereof by the United States. No claims for such occupation, cultivation, or improvement of any such lands shall ever be recognized, nor shall such occupation, cultivation, or improvement ever be used to diminish the purchase price of the public lands.

SEC. 10. The legislature shall pass suitable laws for the safe-keeping, transfer, and disbursement of the funds arising from the sale of the public lands, and of all other public moneys and funds. No custodian of any such moneys or funds shall in any manner use or loan any part thereof for any private purpose or deposit the same in any bank or with any person, corporation, or association otherwise than in the name of the State of New Mexico or of the county to which such moneys or funds belong; and every violation of the foregoing provision shall constitute an embezzlement of so much of the said moneys or funds as shall be so used, loaned, or deposited, and shall be felony, and any failure to pay over, produce, or account for any of the public moneys or funds intrusted to such custodian, as by law required or demanded, shall be deemed prima facie evidence of embezzlement.

ARTICLE XI.—*Assessment and taxation.*

SEC. 1. The rate of assessment and taxation shall be uniform, and taxes shall be levied upon such property as the legislature shall prescribe, except as otherwise herein provided.

SEC. 2. The legislature shall provide at each regular session for raising sufficient revenue to defray the current expenses of the State for two years.

SEC. 3. The legislature shall not levy in any one year a higher rate of taxation than one per centum on the value of the taxable property within the State, except to repel invasion or suppress insurrection.

SEC. 4. The legislature shall have power to levy taxes upon particular articles and upon occupations, which shall be uniform as to the class of persons and property upon which they operate.

SEC. 5. The legislature may also impose a tax upon all incomes in excess of two thousand dollars a year.

SEC. 6. The stock of any company or corporation shall not be taxed without making a proportionate deduction for any property of that company or corporation which may have been taxed.

SEC. 7. The legislature may provide for the levy and collection of an annual poll tax of not more than one dollar on each poll, which shall be applied to the support of public schools in the school district in which it is collected.

SEC. 8. There shall be a State board of equalization, consisting of the governor, secretary of state, auditor of public accounts, state treasurer, and attorney-general. The duty of the State board of equalization shall be to adjust and equalize the valuation of real and personal property among the several counties of the State. Such board shall also perform such other duties relating to taxation as may be prescribed by law.

SEC. 9. The legislature shall have no power to release or discharge any county, city, town, township, school district, or other municipal corporation or subdivision of the State, from its proportionate share of taxes levied for any purpose except by a four-fifths vote.

SEC. 10. The property of the State and of all counties, towns, cities, and school districts, and other municipal corporations, public libraries, lots with the buildings thereon when said buildings are used solely for religious worship or for educational or charitable purposes, and all cemeteries not used or held for private or corporate profit, shall be exempt from taxation. Mining claims before patent shall be taxed only upon the gross output in a manner to be prescribed by law.

SEC. 11. The power to license and tax corporations or corporate property shall never be relinquished by the State or any subdivision thereof.

SEC. 12. The legislature may exempt from taxation, to each head of a family, property to the amount of three hundred dollars.

SEC. 13. The State shall incur no debt for any purpose whatever, including existing indebtedness, in excess of the amount of five hundred thousand dollars, but this shall not be construed to impair or affect the liability of the State for debts of the Territory of New Mexico.

SEC. 14. The credit of the State, or any subdivision thereof, shall not be granted to or in aid of any person, association, or corporation, nor shall the State assume the debts or liabilities of any county, city, town, township, school district, or other municipal corporation or subdivision of the State, unless such debt shall have been created to repel invasion, suppress insurrection, or defend the State in war.

SEC. 15. No money shall be drawn from the treasury except in pursuance of specific appropriation made by law.

ARTICLE XII.—*Municipal corporations.*

SEC. 1. Cities and towns shall not be incorporated by special laws; but the legislature shall provide by general laws for the incorporation, organization, and classification in proportion to the population of the cities and towns, which laws may be altered, amended, or repealed by general laws. Cities and towns heretofore incorporated may become organized under such general laws whenever a majority of the electors at a general election shall so determine, under such provisions therefor as may be made by the legislature.

SEC. 2. Any county, or incorporated city or town, may make and enforce within its limits all such local, police, sanitary, and other regulations as are not in conflict with its charter or with the general laws.

SEC. 3. No municipal corporation, or quasi-municipal corporation, in the State shall incur any debt, including existing indebtedness, for any purpose whatever in excess of five per centum on the taxable property within the limits of such corporation, as shown by the last regular assessment made for the purpose of taxation, nor in any sum whatever in excess of its yearly income or revenue without the assent of a majority of the qualified electors thereof, who shall be payers of taxes on property therein. But this shall not be construed to impair or affect the liability of any such corporation for any existing indebtedness.

SEC. 4. No county, town, city or other municipal or quasi-municipal corporation, by vote of its citizens or otherwise, shall ever become a stockholder in any joint-stock company, corporation, or association whatever, or raise money for, or make donation to, or loan its credit to or in aid of any such company, corporation, or association.

SEC. 5. The several counties of the Territory of New Mexico, as they are now provided for by law, are hereby declared to be the counties of this State until otherwise established or changed by law.

SEC. 6. Provision shall be made by general laws for the creation and organization of new counties, but the question of the creation of any new county shall be submitted to a vote of the qualified electors in the territory embraced within the proposed new county before any such county shall be created; but no county now established shall be reduced, nor shall any new county be formed, so as to have less population than will be sufficient to entitle it to at least one representative in the legislature.

SEC. 7. No county now established as aforesaid shall be reduced to an area of less than twelve hundred and ninety-six square miles, and no new county shall be formed containing less than twelve hundred and ninety-six square miles, until twelve years after this constitution goes into effect.

SEC. 8. New or unorganized counties may for the purposes of administration be temporarily annexed to such other county or counties as may be most convenient.

SEC. 9. Whenever territory is taken from any county or counties and attached to another, or whenever a new county is formed, the county to which said territory is attached, or the new county, shall be liable to pay its ratable proportion of all the then existing liabilities of the county or counties from which such territory is taken or from which such new county is formed, less the same ratable proportion of the value of the county buildings and property of the county or counties from which such territory is taken; provided, that such portion so taken shall have been a portion of the county from which the same is taken for not less than four years previously.

SEC. 10. In any county where the county seat has not been fixed, the question of its place shall be submitted to the electors of the county at a general election. The place receiving the majority of all votes cast by qualified electors shall be the county seat; but in the formation of new counties the county seat may be fixed temporarily by the legislature.

SEC. 11. No county seat shall be changed until a proposition designating the place to which the removal is proposed shall have been submitted to the electors of the county, and shall have received two-thirds of the vote cast by qualified electors. No person shall vote on such a proposition who shall not have resided in the county for six months, and in the election precinct for ninety days next preceding the election. A proposition to change the location of the county seat, after having been so submitted, shall not again be submitted to the electors for five years.

SEC. 12. All county and precinct officers shall be elected by the qualified electors of the county or precinct respectively, and city, town, and village officers shall be elected or appointed as may be prescribed by law.

ARTICLE XIII.—*Corporations.*

SEC. 1. All existing charters or grants of special or exclusive privileges, under which the corporations or grantees shall not have organized and commenced business in good faith at the time of the adoption of this constitution, shall thereafter have no validity, except in such corporations or grantees whose time to organize under their charter or grant has not expired at the time of the adoption of this constitution.

SEC. 2. The legislature shall provide the method whereby the courts may revoke or annul any charter or incorporation existing and revocable at the time this constitution goes into effect, or that may thereafter be created, whenever in its opinion it may be injurious to the citizens of the State, in such manner, however, that no injustice shall be done to the corporators or creditors.

SEC. 3. In all elections for directors or managers of incorporated companies, every stockholder shall have the right to vote in person or by proxy the number of shares of stock owned by him, for as many persons as there are directors or managers to be elected, or to cumulate said shares and give one candidate as many votes as the number of directors or managers multiplied by the number of his shares of stock shall equal, or to distribute them on the same principle among as many candidates as he shall think fit; and such directors or managers shall not be elected in any other manner.

SEC. 4. No corporation shall acquire or hold property, or engage in business in this State, without having a designated place of business and an authorized agent within the State upon whom process may be served.

SEC. 5. No railroad, telegraph, express, or other corporation, or the lessees or managers thereof, shall consolidate its stock, property, or franchises with any other railroad, telegraph, express, or other corporation owning or having under its control a parallel or competing line. And in no case shall any consolidation take place except upon at least sixty days' public notice to all stockholders in such manner as may be provided by law.

SEC. 6. No street or other railroad shall be constructed upon any street or highway within any incorporated city, town, or village without the consent of the local authorities having the control of the street or highway proposed to be occupied by such street or other railroad.

SEC. 7. The term "corporation," as used in this article, shall not be understood to embrace municipalities or political divisions of the State unless otherwise expressly stated; but it shall be held and construed to include all associations and joint-stock companies having any of the powers and privileges of corporations not possessed by individuals or partnerships.

SEC. 8. Any combination between individuals, associations, or corporations having for its object, or which shall operate to control, the price or exchange of any article of manufacture or commerce, product of the soil or mine, is hereby prohibited and declared unlawful and against public policy; and the legislature shall provide by law such penalties and forfeitures as shall be sufficient to prevent all such unlawful combinations.

SEC. 9. All railroad, transportation, and express companies organized under the laws of this or of any other State doing business in the State shall be common carriers, and all railroads owned or controlled by such companies shall be public highways, and the legislature shall pass laws to correct abuses and prevent unjust discrimination and extortion in the rates of freight, express, and passenger tariffs on the different railroads, and in the charges of telephone, telegraphic, and insurance companies in this State, and enforce such laws by adequate penalties, to the extent, if necessary for that purpose, of forfeiture of their property and franchise. The question as to the existence of unjust discrimination and extortion shall be a judicial question to be determined by the courts.

SEC. 10. Each stockholder in all incorporated companies, except corporations organized for banking or insurance purposes, shall be liable for the debts of the corporation to the amount of his unpaid stock and no more, and one or more stockholders may be joined as parties defendant in suits to recover upon this liability.

SEC. 11. Corporations shall not issue stock except to bona fide subscribers therefor or their assignees; nor shall any corporation issue any bond or other obligation for the payment of money, except for money or property received or labor done. The stock of corporations shall not be increased except in pursuance of a general law, nor shall any law authorize the increase of stock without the consent of the person or persons holding the larger amount in value of the stock, nor without due notice of the proposed increase having been previously given in such manner as may be prescribed by law. All fictitious increase of stock or indebtedness shall be void.

SEC. 12. No corporation organized outside the limits of this State shall be allowed to transact business within the State on more favorable conditions than are prescribed by law to similar corporations organized under the laws of this State.

SEC. 13. No corporation shall alienate or lease any franchise so as to relieve the franchise or property held thereunder from the liabilities of the lessor or grantor, lessee or grantee, contracted or incurred in the operation, use, or enjoyment of such franchise or any of its privileges.

SEC. 14. The property and franchises of incorporated companies shall be subject to the right of eminent domain, the same as the property of individuals.

SEC. 15. No corporation, association, or individual shall issue or put in circulation as money anything but the lawful money of the United States. Each stockholder of any bank or insurance company shall be individually and personally liable, equally and ratably, and not one for another, for all contracts, debts, and engagements of such bank or insurance company accruing while they remain such stockholders, to the extent of the amount of their stock therein at the par value thereof, in addition to the amount invested in such shares.

SEC. 16. Any president, director, manager, cashier, or other officer of any banking institution, who shall receive or assent to the reception of deposits after he shall have knowledge of the fact that such banking institution is insolvent or in failing circumstances shall be individually responsible for such deposits so received.

ARTICLE XIV.—*Mining and water rights.*

SEC. 1. There may be established and maintained the office of commissioner of mines, the duties and salary of which shall be prescribed by law. When said office shall be established the governor shall, with the advice and consent of the senate, appoint thereto a person known to be competent, whose term of office shall be two years.

SEC. 2. The legislature shall provide by law for the proper ventilation of mines, the construction of escapement shafts, and such other appliances as may be necessary to protect the health and secure the safety of the workmen therein, and shall prohibit the employment in the mines of children under twelve years of age.

SEC. 3. The legislature may make such regulations from time to time as may be necessary for proper and equitable drainage of mines.

SEC. 4. The legislature may provide that the science of mining and metallurgy be taught in one or more of the institutions of learning under the patronage of the State.

SEC. 5. Whenever by priority of possession rights to the use of water for mining, agriculture, manufacturing, or other purposes have vested and accrued, the possessors and owners of such vested rights shall be maintained and protected in the same, and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed, subject to the restrictions of this constitution as to taking property for public or private use.

ARTICLE XV.—*Forestry.*

SEC. 1. The legislature shall enact laws to prevent the destruction of and to preserve the forests on the lands of the State and upon any part of the public domain the control of which may be conferred by Congress upon the State.

SEC. 2. The legislature may provide by law that the increase in value of private lands, caused by the planting of hedges, orchards, and forests thereon, shall not for a limited time be taken into account in assessing such lands for taxation.

ARTICLE XVI.—*Miscellaneous.*

SEC. 1. In addition to the State University, the Agricultural College, the Asylum for the Insane, and the School of Mines already established by law in the Territory of New Mexico, one or more State normal schools shall be provided for.

SEC. 2. Public institutions may be established by law for the maintenance, care, and instruction of deaf and dumb, blind, or indigent sick persons, orphans, or paupers; and whenever any such institution shall have been so established and put in operation, no other institution for the same purpose shall receive any aid or support from public funds; but until such institutions are so established and put in operation, provision may be made by law for the maintenance, care, and instruction of such persons by individuals or in other institutions. Such aid and support shall be under the inspection of proper officers appointed for that purpose, and every such individual or other institution shall make itemized annual reports concerning such aid and support to the governor for the information of the legislature.

SEC. 3. Public money or property shall never be used or appropriated for private purposes, nor for the aid or support of any institution not under the absolute control of the State, except for the time as in the foregoing section mentioned.

SEC. 4. The compensation of no officer shall be by law increased or diminished after his election, or during his term of office.

SEC. 5. All officers who are by law charged with the duty of collecting fees for services which are to be paid into any public fund shall collect the same in advance, and shall be responsible for any loss resulting from a failure so to do.

SEC. 6. Except as otherwise provided in this constitution, every officer, unless sooner removed according to law, shall hold his office during the term for which he shall have been elected or appointed, and until his successor shall be duly qualified.

SEC. 7. Each officer elected or appointed to office under the authority of this constitution shall take and subscribe an oath or affirmation to support the Constitution of the United States and of this State, and to faithfully discharge the duties of his office, which oath or affirmation shall be filed in the office of the secretary of state.

ARTICLE XVII.—*Amendments.*

SEC. 1. Amendments to this constitution may be proposed in either branch of the legislature, and if the same shall be agreed to by two-thirds of all the members elected to the two houses, voting separately, such proposed amendments shall, with the ayes and nays thereon, be entered upon their journals, and it shall be the duty of the legislature to submit such amendments to the electors of the State at the next general election, and cause the same to be published without delay for at least six consecutive weeks prior to said election in not less than one newspaper of general circulation (if there be such newspaper) published in each county, and if the majority of the electors shall ratify the same, such amendments shall become a part of this constitution.

SEC. 2. If more than one amendment is proposed, they shall be submitted in such manner that the electors shall vote for or against each of them separately.

SEC. 3. Whenever two-thirds of the members elected to each branch of the legislature shall deem it necessary to call a convention to revise or amend this constitution, they shall recommend the electors to vote at the next general election for or against the convention, and if a majority of all the electors voting at such election shall have voted for a convention, the legislature at its next session shall provide by law for calling the same, and such convention shall consist of a number of members not less than double the number of senators at that time in the legislature. The legislature shall prescribe the manner of voting for said convention.

SEC. 4. Any constitution adopted by such convention shall not take effect until it has been submitted to and ratified by the people.

SEC. 5. Nothing in this article contained shall be construed to authorize any amendment or revision or repeal of any article or section of this constitution, which by its terms is made irrevocable, except as therein provided.

ARTICLE XVIII.—*Compact with the United States.*

SEC. 1. The State of New Mexico is an inseparable part of the Federal Union and the Constitution of the United States is the supreme law of the land.

SEC. 2. The legal debts and liabilities of the Territory of New Mexico shall be assumed and paid by this State.

SEC. 3. Perfect toleration of religious sentiment shall be secured, and no inhabitant of this State shall ever be molested in person or property on account of his or her mode of religious worship, nor shall any preference be given by law to any religious establishment. No religious test shall be required for any office or for any vote at any election; nor shall any person be incompetent to testify on account of his or her opinions on matters of religious belief, nor be questioned in any court touching such opinions so as to affect the weight of his or her testimony.

SEC. 4. The people inhabiting this State do agree and declare that they forever disclaim all right and title to the unappropriated public lands lying within the boundaries thereof, and to all lands lying within said limits owned or held by any Indian or Indian tribes, and that until the title thereto shall have been extinguished by the United States the same shall be and remain subject to the disposition of the United States, and said Indian lands shall remain under the absolute jurisdiction and control of the Congress of the United States; that the lands or other property belonging to citizens of the United States residing without the State shall never be taxed at a higher rate than the lands or other property belonging to residents thereof; that no taxes shall be imposed by the State on lands or property therein belonging to or which may hereafter be purchased by the United States or reserved for its use. But nothing herein shall preclude the State from taxing as other lands are taxed any lands owned or held by any Indian who has severed his tribal relations, and has obtained from the United States or from any person or source a title thereto by patent or other grant, save and except such lands as have been or may be granted to any Indian or Indians under any act of Congress containing a provision exempting the lands thus taxed from taxation; but all such lands shall be exempt from taxation by this State so long and to such extent as such act of Congress may prescribe.

SEC. 5. Provision shall be made for the establishment and maintenance of a system of public schools, which shall be open to all the children of this State and free from sectarian control, and no other or different schools shall receive any aid or support from the public treasury.

SEC. 6. The ordinances and provisions in this article contained are hereby declared to be irrevocable without the consent of the United States and the people of this State.

SCHEDULE AND ORDINANCE.

SEC. 1. All writs, actions, prosecutions, claims, liabilities, and obligations in favor of or against the Territory of New Mexico and all rights of individuals and bodies corporate shall continue as if no change had taken place in this government; and all process which may before the organization of the judicial department under this constitution be issued under the authority of the Territory of New Mexico shall be as valid as if issued in the name of the State.

SEC. 2. All property and rights of the Territory and of the several counties, subdivisions, and political bodies corporate of or in the Territory, including fines, penalties, forfeitures, debts, claims, and recognizances, obligations, and other undertakings heretofore taken or which may be taken before the organization of the judicial department under this constitution, to or for the use of the Territory of New Mexico or any county, subdivision, or political body corporate, officer or otherwise, to or for the public, shall inure to the State or remain to the county, local subdivision, corporation, officer, or public, as the case may be, as if the change of government had not been made, and may be sued for and recovered accordingly. All criminal prosecutions and penal actions which have arisen or may arise before the organization of the judicial department under this constitution, and which shall then be pending, may be prosecuted to judgment and execution in the name of the State.

SEC. 3. All crimes and misdemeanors committed against the Territory of New Mexico shall be punished by the State as they might have been punished by the Territory if the change of government had not been made.

SEC. 4. All laws in force in the Territory of New Mexico when this constitution takes effect which are not repugnant to this constitution shall remain in force until they expire by their limitation or be altered or repealed by the legislature.

SEC. 5. This constitution shall take effect and be in full force immediately upon the admission of New Mexico as a State.

SEC. 6. All officers who may be holding their offices and appointments in the Territory of New Mexico under the authority of the United States or under the authority of said Territory at the time of the admission of New Mexico as a State shall continue to hold and exercise their respective offices and appointments until superseded by the State authorities under this constitution.

SEC. 7. All cases pending in the supreme court of the Territory of New Mexico, except cases arising under the Constitution and laws of the United States, shall be removed into the supreme court hereby created, to be there heard and determined as though originally brought up to that court from the district court of the State; and if any such case is remanded for further or other proceedings it shall be sent back to the district court of the State for the county in the district court for which, under the Territorial form of government, the original judgment or decree was entered.

SEC. 8. The district court for each county is declared to be a successor to and a continuation of the district court established in such county by the Territorial legislature, and all pending suits, matters, and proceedings, both civil and criminal, shall be tried, heard, and determined by the new court hereby established, and the files, dockets, and other records shall be continuous and unbroken.

SEC. 9. The probate court for each county shall be a continuation of the probate court under the Territorial government, and the record and files thereof shall be continuous and unbroken.

SEC. 10. Until otherwise provided by law, the seals now in use by the supreme, district, and probate courts of the Territory are hereby declared to be the seals of the supreme, district, and probate courts, respectively, of the State.

SEC. 11. This constitution shall be submitted for adoption or rejection to a vote of the electors qualified by law to vote at all elections in the Territory of New Mexico, at a special election to be held at the same time as the general election, on the first Tuesday after the first Monday in November, A. D. 1890, unless the Congress of the United States shall sooner pass an enabling act for the Territory of New Mexico, in which case, unless the time for an election is fixed in said act, this constitution shall be submitted to the people at an election to be held within ninety days after the passage of such act, to be called by a proclamation of the governor of the Territory of New Mexico, such proclamation to be issued not less than forty days before the day of the election. Said election shall be conducted in all respects in the manner provided by the laws of the Territory for general elections, and the returns thereof shall be made and canvassed in the same manner and by the same authority as provided in cases of general elections, and abstracts of such returns duly certified shall be transmitted to the board of canvassers, which said board of canvassers shall consist of the governor and secretary of the Territory and the president of this convention. Said board shall canvass the votes so returned and certify the same and declare the result of said election in the same manner as is required by law for the election of a Delegate in Congress.

At the said election all ballots which may be cast in favor of the constitution shall have written or printed on them the words "for the constitution," and all ballots which may be cast against the constitution shall have written or printed on them the words "against the constitution," and such ballots shall be counted for or against the constitution accordingly.

Said board of canvassers shall also make and file with the secretary of the Territory a certificate setting forth the number of votes cast for the constitution and the number cast against it, and shall also file a certificate certifying whether the said constitution has been ratified by a majority of all the votes cast for or against it or not, copies of which certificate shall be forwarded by the secretary of the Territory, duly certified by him, one to the Speaker of the House of Representatives and another to the President of the Senate of the Congress of the United States; and said secretary shall also forward along with each of said certificates, and attach thereto, a duly certified copy of this constitution.

SEC. 12. Immediately upon the admission of the Territory as a State the governor of the Territory, or in case of his absence or failure to act, the secretary of the Territory, or in case of his absence or failure to act, the president of this convention, shall issue a proclamation, which shall be published and a copy thereof mailed to the chairman of the board of county commissioners of each county, calling an election by the people of all State, district, county, precinct, and other officers created and made elective by this constitution, and fixing a day for such election, which shall not be less than forty days after the date of such proclamation nor more than ninety days after the admission of the Territory as a State.

SEC. 13. The board of county commissioners of the several counties shall thereupon order such election for said day, and shall cause notice thereof to be given in the manner and for the length of time provided by the laws of the Territory in cases of general election for Delegate to Congress and county and other officers.

Every qualified elector of the Territory at the date of said election shall be entitled to vote thereat. Said election shall be conducted in all respects in the same manner as provided by the laws of the Territory for general elections, and the returns thereof shall be made and canvassed in the same manner and by the same authority as provided in cases of such general elections, but returns for all State and district officers and members of the legislature shall be made to the canvassing board herein provided for.

SEC. 14. Thirty days after such election for State, district, county, precinct, and other officers (or on the following day if said thirtieth day shall fall on Sunday), said board of canvassers shall assemble at the seat of government as now fixed by law and proceed to canvass the votes for all State and district officers and members of the legislature in the manner provided by the laws of the Territory for canvassing the votes for Delegate to Congress, and they shall issue certificates of election to the persons found to be elected to said offices severally, and shall make and file with the secretary of the Territory an abstract certified by them of the number of votes cast for each person for each of said offices and of the total number of votes cast in each county.

SEC. 15. The canvassing board of the various counties shall issue certificates of election to the several persons found by them to have been elected to the several county and precinct offices.

SEC. 16. All officers elected at such election shall, within thirty days after they have been declared elected, if New Mexico shall have been then admitted as a State, and if not, within thirty days after New Mexico shall have been admitted as a State, take the oath required by this constitution, and give the same bond as required by the laws of the Territory to be given in cases of like officers of the Territory, and shall thereupon enter upon the duties of their respective offices; but the legislature may require by law all such officers to give other or further bonds.

SEC. 17. All officers elected at such election shall hold their offices until the legislature shall provide by law in accordance with this constitution for the election of their successors and until such successors shall be elected and qualified.

SEC. 18. The governor-elect of this State, immediately upon his qualifying and entering upon the duties of his office, shall issue his proclamation convening the legislature of the State at the seat of government as now fixed by law, on a day to be named in such proclamation, and which shall not be less than fifteen nor more than thirty days after the date of such proclamation. Within ten days after the organization of the legislature both houses thereof shall proceed to elect, as provided by law, two Senators of the United States for the State of New Mexico. At said election the two persons who shall receive a majority of all the votes cast by the senators and representatives of the State shall be elected as such United States Senators, and shall be so declared by the presiding officers of the joint session of said two houses.

The presiding officers of the senate and house of representatives shall issue a certificate of election to each of said Senators, certifying the fact of his election, which certificate shall also be signed by the governor and attested by the secretary of state.

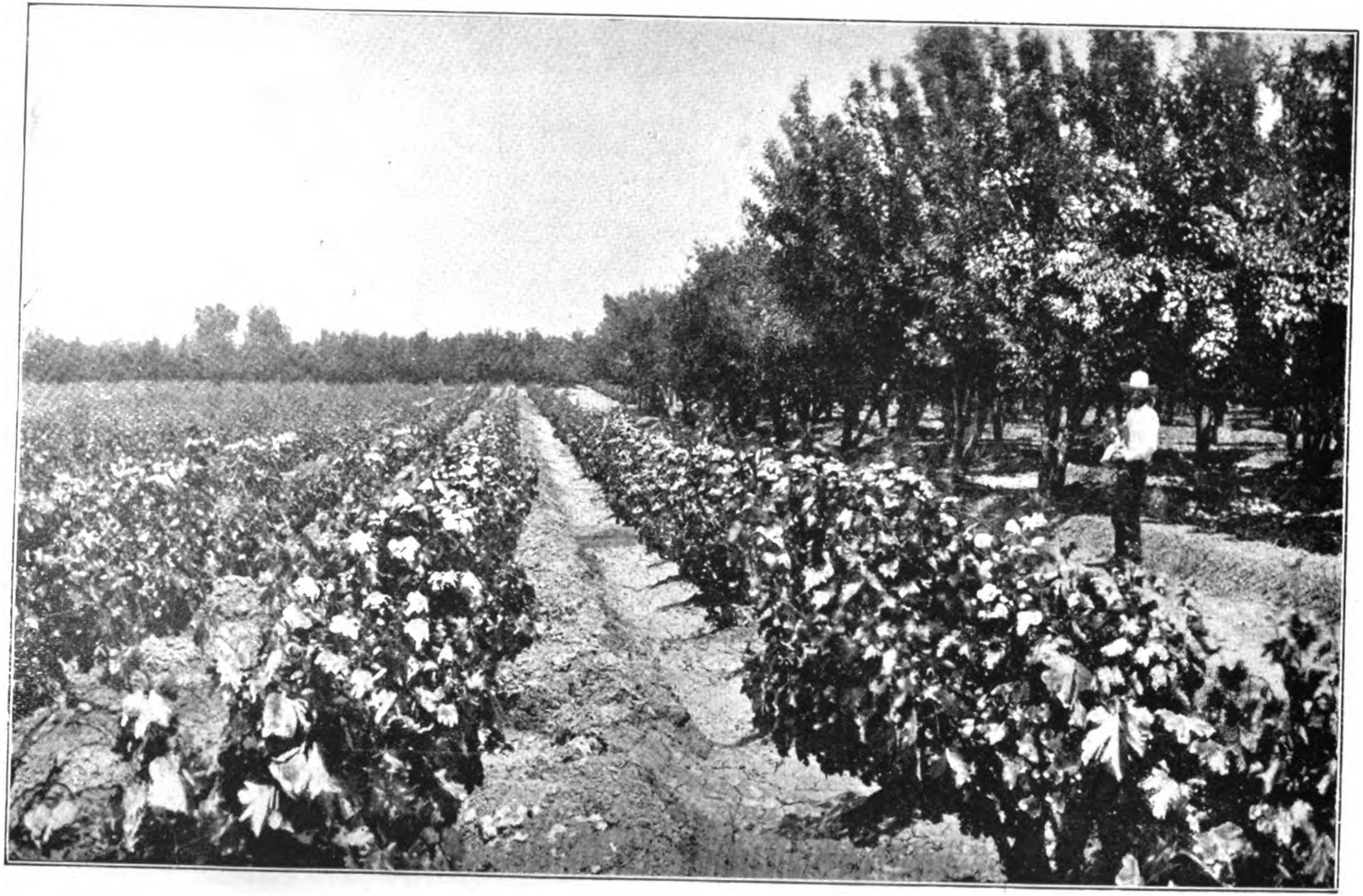
SEC. 19. It is hereby made the duty of the legislature at its first session to provide for the payment of all debts and indebtedness incurred and authorized to be incurred by the constitutional convention of New Mexico which shall remain unpaid by the Territory of New Mexico.

SEC. 20. This constitution shall be enrolled in duplicate, after which both copies thereof shall be signed by the president of this convention and the secretary thereof and such delegates as desire to sign the same, whereupon they shall be deposited in the office of the secretary of the Territory, where they may be signed at any time by any delegate who shall be prevented from signing the same for any reason at the time of the adjournment of this convention. On the first day of December, A. D. 1889, the secretary of the Territory shall forward one of said copies to the President of the United States, at Washington, and shall attach his certificate thereto under his seal of office certifying that the same is one of the duplicate enrolled copies of the constitution adopted by this convention; the other copy shall remain on file in his office until the secretary of state shall be qualified under this constitution, when the same shall be turned over to him and filed by him and safely deposited and recorded by him in the books of miscellaneous records.

SEC. 21. Until otherwise provided by law the number and jurisdiction of the district attorneys shall be as now provided by law.

Done in open convention at the city of Santa Fe, in the Territory of New Mexico, this 21st day of September, in the year of our Lord 1889.

J. FRANCISCO CHAVEZ, *President of Convention.*
I. M. BOND, *Secretary of Convention.*



Vineyard in Lower Rio Grande Valley.

RAILROADS.

SANTA FE, N. MEX., *August 6, 1900.*

SIR: In reply to your letter of June 30, 1900, I beg leave to hand you a report on railroads in the Territory of New Mexico up to and including June 30, 1900. Trusting that you may find the same correct,

I have the honor to be, your obedient servant,

MAX FROST,
Secretary Bureau of Inmigration.

His Excellency MIGUEL A. OTERO,
Governor of New Mexico.

Early in the spring of 1879 it was the fortune of the writer of these lines to pass through the Territorial empire of New Mexico from Trinidad, Colo., to Las Cruces and Silver City in the extreme southern and southwestern parts of the Territory, tediously traveling the entire distance of upward of 700 miles in old-fashioned stagecoaches at the rate of about 5 miles an hour. Less than two years later he passed over part of the same route, but the slow-going and toiling stagecoach had disappeared, and he rode into the very heart of the historic and resourceful region in a palace car, which left the Missouri River less than two days before and conveyed its passengers with as much comfort and far less fatigue than is experienced in making the journey from New York to Chicago. The wonderful rapidity with which steel rails had been extended into this sparsely settled country of magnificent distances was not more marvelous than the many striking manifestations on every hand of an astonishing awakening from the slumber of two centuries, attributable to the inspiring and stimulating influence of railway lines, bringing the long-neglected Territory in close touch with the enlightened progress and fruitful modern methods of the Eastern States.

In the early history of the utilization of steam for transportation purposes it was supposed that a country must be settled and developed before it could support a railway, and those who projected new lines followed the great routes which internal commerce had already established for itself and whose facilities it had outgrown. The pioneer railway builders sought to connect the large towns and to secure a traffic already important and likely to grow. Soon after the close of the civil war this theory was abandoned and the railway has since been the advance agent of civilization in the country. It has pushed out into countries that were almost destitute of population and which had not felt the stimulating influence of outside capital, following close upon the trails of Government exploring expeditions, whose reports of undeveloped natural resources and descriptions of scenic and climatic attractions have been among its most important guides.

The men who have invested in the construction of most of the railways of the West have not done so because they believed the traffic of the regions through which they were projected was sufficient at the time to support the enterprises, but because they were persuaded that the roads would rapidly create a profitable volume of business for themselves. These remarks may be applied with peculiar propriety to the several railway lines of New Mexico. They have not only quickened the entire Territory into new life, attracting desirable immigration from all parts of the country, and giving a fresh and healthful impulse to all the useful activities of the people, but have actually created a large part of the traffic that is already making them more than self-supporting, and insures them large and steadily increasing profits in the future, thus satisfactorily demonstrating the wisdom of their projectors and affording substantial encouragement for the early construction of the important new lines projected in the Territory. Not one of the ten railway lines in New Mexico is in the hands of a receiver, and, after passing through the various trying vicissitudes inevitably incident to the development of natural resources, all of them have reached a point where they annually show net earnings.

Justly sharing in the general and unexampled prosperity of the entire Territory, including particularly the mining, lumber, stock-growing, wool-raising, agricultural, and horticultural industries, the railways of this region have earned larger profits during the past year than during any twelve months since the first locomotive whistled in New Mexico, about twenty years ago. And the future is bright with promise of richer rewards to come. The development of the magnificent possibilities of the Territory has so far only been initiated. When its vast and only partly explored mineral belts, carrying untold values in gold, silver, copper, lead, zinc, iron, and precious stones, are systematically opened up and their riches rendered available; when its extensive coal measures, some of them still miles from railways, are worked to their full capacity and their product utilized in smelting and manufacturing plants; when its comparatively untouched forests of fine timber, such as are found in the Black Range and elsewhere, are placed within the reach of enterprise by means of adequate transportation facilities and are united with its building stones and brick-making materials, boundless in quantity, and unexcelled in quality, in structural work; when its immense and apparently inexhaustible deposits of salt, soda, alum, sulphur, gypsum, kaolin, and fire clay are accessible and brought into use; when the raising of blooded and graded cattle supplants the old range method, and an approximation of the Ohio plan is adopted in the production of sheep and wool; when all its arable lands are placed under the magic touch of water and rendered fruitful by means of a general system of storage reservoirs and irrigation canals, the railways of New Mexico will enter upon an era of prosperity equal to that enjoyed by those that gridiron the great Commonwealths of Pennsylvania, Ohio, Indiana, and Illinois. These manifest possibilities will all sooner or later be realized. The railways have already contributed immensely toward the development of the Territory. They will do more in the same direction each year.

At the present writing there are 1,704 miles of railway actually constructed within the boundaries of New Mexico, and but few sections of the Territory are without rail and telegraphic communication with all parts of the world. The lines of railway represented in this large mileage are owned and operated by 10 different corporations, some operating wholly within the Territory, but most of them coming under either the transcontinental or interstate classifications, and, named in the order of their importance, are as follows:

Atchison, Topeka and Santa Fe Railway Company, including Santa Fe-Pacific Railway Company.
Denver and Rio Grande Railroad Company.
Pecos Valley and Northeastern Railroad Company.
Southern Pacific Railway Company.
El Paso and Northeastern Railroad Company.
Colorado and Southern Railroad Company.
New Mexico and Arizona Railroad Company.
Arizona and New Mexico Railroad Company.
Alamogordo and Sacramento Mountain Railroad Company.
Tierra Amarilla Southern Railroad Company.

The Atchison, Topeka and Santa Fe is not only one of the pioneer railway systems of the West, but is the greatest of all the transcontinental lines, extending from Chicago to Los Angeles and San Francisco, and operating a total of 7,782 miles of railway in twelve States and Territories. It entered New Mexico early in 1880, in advance of all competitors, and now operates 849 miles of perfectly constructed track within the Territory. It crosses the northeastern border of New Mexico near the city of Raton and passes through the entire Territory, near the center, traversing the fertile valley of the Rio Grande, and passing out near the city of El Paso, Tex. Its northern line extends almost due west from Albuquerque, through the extensive coal fields and grazing lands of western New Mexico, to Los Angeles and San Francisco on the Pacific, while branches of its southern line extend from Rincon to Deming, Silver City, and Santa Rita, tapping the famous gold, silver, copper, lead, and iron mining districts of Grant County, and connecting with lines for southern and lower California. It also operates branch lines to the Blossburg coal mines in Colfax County, to the pleasure and health resort at Las Vegas Hot Springs, to the Cerrillos or Madrid coal mines in Santa Fe County, to the great lead and carbonate mines at Magdalena in Socorro County, and to the celebrated silver mines at Lake Valley in southern Sierra County. The three largest cities of the Territory—Las Vegas, Santa Fe, and Albuquerque—and also the flourishing cities and villages of Raton, Springer, Mora, Wagonmound, Los Lunas, Socorro, San Marcial, Las Cruces, Deming, and Silver City, are situated on the main line and numerous branches of this system.

The Denver and Rio Grande Railroad enters the Territory south of Antonito, Colo., and passes in a southerly direction through the counties of Taos, Rio Arriba, and Santa Fe to the capital city of Santa Fe, a distance of 114 miles, rendering accessible some of the finest agricultural, grazing, and mineral lands in the Territory. Fifty-two miles of its tracks between Antonito and Durango, Colo., passes through the valuable coal and timber belts of northern Rio Arriba County, N. Mex., increasing its total trackage in the Territory to 166 miles. The city of Santa Fe and the towns of Espanola, Embudo, Tres Piedras, Chama, and Lumberton are upon this road.

The Pecos Valley and Northeastern Railroad Company is at present operating 192 miles of well-equipped railway within the Territory. The line of this company passes through the heart of the beautiful and fruitful Pecos Valley from the Texas line on the south, through Eddy and Chaves counties, to Roswell on the north, and thence in a northeasterly direction to Amarilla, Tex., where it connects with trunk lines for the east and southeast. Its southern terminus is Pecos, where it connects with the Texas railway system. It passes through the towns of Carlsbad, Hagerman, and Roswell in the Pecos Valley, besides numerous towns on the recently constructed extension to Amarilla. This line is the main outlet for the large cattle, sheep, and wool traffic of southeastern New Mexico, and also affords markets for the surplus products of the peerless farms, orchards, and gardens of the Pecos Valley.

The El Paso and Northeastern Railway extends from El Paso and Fort Bliss, in Texas, through Jarilla, Alamogordo, La Luz, Tularosa, and Three Rivers, in Otero County, New Mexico, to its present terminus at El Capitan, in the Salado coal fields of Lincoln County. The trackage of this new road within the Territory is at present 154 miles and construction work is still in progress. It passes through some of the best mining, timber, stock-raising, and farming lands of the Territory. Sufficient development work has already been done to establish the fact that the gold, copper, iron, and turquoise mines of the Jarilla district are exceedingly valuable. The 8 opened coal mines in the Capitan district are already outputting from 300 to 500 tons of superior coal per day.

The Southern Pacific Railroad Company has about 166 miles of its tracks within the Territory. It enters the Territory from the east, about 4 miles northwest of the city of El Paso, passes through a broad plain mainly devoted to the stock industry, and crosses the Arizona line near San Simon. The towns of Deming, Lordsburg, and Shakespeare are situated upon this road.

The Colorado and Southern Railway, formerly the Denver and Gulf, crosses the extreme northeastern corner of New Mexico and 76 miles of its tracks are within the Territory. This road passes through Clayton and Folsom, the principal towns of Union County, and enters the State of Texas at Texline, forming an important trunk line from Denver through central Texas to the Gulf of Mexico. Stock raising is the most important industry in the section of New Mexico traversed by this line.

In the southwestern part of the Territory the New Mexico and Arizona Railway Company, whose line runs from Deming, N. Mex., to Benson, Ariz., a distance of 176 miles, has 25 miles of its own track within this Territory. This road uses the track of the Southern Pacific from Deming to Lordsburg. The Arizona and New Mexico Railway Company, whose road extends from Lordsburg to Clifton, Ariz., operates 30 miles of its track within New Mexico. The principal traffic of both these roads is the transportation of ores.

The Alamogordo and Sacramento Mountain Railway, which was last year completed from Alamogordo to Toboggan and Cloudcroft, a distance of 20 miles, and the narrow-gauge timber railway up the various canyons of the Sacramento Mountains, about 9 miles in length, are practical extensions of the El Paso and Northeastern system. Both roads are used mainly for the transportation of timber to the mills in Alamogordo. Cloudcroft is situated upon the summit of the Sacramento Mountains and is a popular summer resort. The Alamogordo and Sacramento Railway shows some of the most intricate work in broad-gauge railway building to be found in the world. Maximum grades of 5.2 per cent and 30-degree curves are features of the road.

The Tierra Amarilla Southern is a private railway, owned by the Burns & Biggs Lumber Company, operating large sawmills on the Tierra Amarilla grant. It runs from the town of Chama, Rio Arriba County, to the town of Brazos, in the same county, a distance of 17 miles.

The following is a recapitulation of the railways now constructed in New Mexico, together with the mileage of each within the Territory:

	Miles.
Atchison, Topeka and Santa Fe Railway	849
Denver and Rio Grande Railroad	166
Pecos Valley and Northeastern Railway	192
Southern Pacific Railway	166
El Paso and Northeastern Railway	154
Colorado and Southern Railway	76
New Mexico and Arizona Railway	25
Arizona and New Mexico Railway	30
Alamogordo and Sacramento Mountain Railway	29
Tierra Amarilla Southern Railway	17
Total mileage in New Mexico	1,704

During the year 1899, 301 miles of new railway were constructed within the Territory, the new mileage being included in the foregoing total. This work was done by the following companies:

	Miles.
El Paso and Northeastern	154
Pecos Valley and Northeastern	100
Alamogordo and Sacramento Mountain	29
Atchison, Topeka and Santa Fe	18
Total new mileage last year	301

No new railway construction work has been done in the Territory so far this year, but several important new lines are projected, and it seems probable that most of them will be built at an early day. Among the most needed and promising of these projected lines is the contemplated Black Range Railway from Magdalena on the Santa Fe system to Chloride, in northern Sierra County, a distance of less than 90 miles, and thence southwesterly down the Gila River to a point at or near Clifton, Ariz., about 100 miles, tapping the immense wealth of minerals and timber in the Black Range and the fine and extensive tributary stock ranges. Preliminary surveys show that this proposed line is exceptionally feasible from a construction standpoint, the grades being comparatively easy and no costly work being involved in the undertaking, and careful and conservative estimates place the immediate daily tonnage of the Magdalena-Chloride line alone in round numbers as follows: Ore, 25 cars; live stock, 4⅔ cars; merchandise, ties, lumber, etc., 4⅓ cars; total, 34 cars. Judging from the fact that the annual tonnage in and out of Silver City is not less than 20 cars per day, it is believed that the tonnage of Chloride alone would nearly equal the foregoing estimate. The cost of constructing and equipping the Magdalena-Chloride line is estimated at $1,418,627.50, and the annual earnings at $405,255.

Another important and seriously contemplated stretch of new railway construction in the Territory is the projected extension of the Chicago, Rock Island and Pacific system from Liberal, Kans., west and southwest, through Union, Guadalupe, and Lincoln counties to El Capitan, N. Mex., there connecting with the El Paso and Northeastern Railway, and thus forming a continuous trunk line from Chicago through New Mexico to El Paso, Tex. Both the Rock Island and the El Paso and Northeastern companies have corps of engineers in the field making preliminary surveys for the proposed new line.

It is also understood that it has been decided in the near future to extend the Pecos Valley and Northeastern or Hagerman system from Roswell south and southwest through Chaves County, thence circling westward through the Penasco region and between the Sacramento and Guadalupe mountains, and passing on in a southwesterly direction to El Paso, a distance of probably 140 miles, affording the eastern and southern sections of the Territory another direct eastern and southern outlet. The developed and undeveloped mining, timber, stock-growing, wool, agricultural, and fruit industries of the tributary regions would unquestionably afford this line a large volume of profitable local traffic, which could be depended upon to increase each year.

There are substantial reasons for believing that the Denver and Rio Grande Railroad Company has determined soon to begin the construction of a line south into New Mexico from its southwestern terminus at Durango, Colo., running down the Rio Las Animas through San Juan County, N. Mex., to the junction of the Animas and San Juan rivers, at Farmington, thence following the San Juan River in a northerly and westerly direction, crossing the southwest corner of Montezuma County, Colo., extending almost due west along the San Juan River into San Juan County, Utah, to Bluff City, and thence westerly, probably to the Pacific, with spurs and branches as needed. Confidence that this important work will soon be undertaken in earnest is founded upon the fact that a Rio Grande subcorporation, capitalized at $2,000,000, was recently incorporated at Denver for the purpose of constructing six branch lines, eventually to be operated as parts of the Denver and Rio Grande system, and the line south from Durango was distinctly indicated as one of the number. It also seems probable that a branch will be extended south through Bernalillo County to Gallup and Albuquerque. The road from Durango to Farmington would pass through the wonderful fruit belt of San Juan County, N. Mex., and would render available some of the best coal lands in the Territory. It is urgently needed and would prove profitable.

The Cochiti and Northwestern Railway Company has been incorporated for the purpose of building a line of railway from Thornton Station, on the Santa Fe system, through the phenomenal Cochiti gold-mining district, to Bland, and thence westward to the Jemez Hot Springs, in Bernalillo County. It is asserted that the bonds for the construction of this important road have been sold and that construction work will soon be commenced. No doubt is entertained that this line would more than pay expenses from the very first day it was operated.

A company has been formed for the construction of a railway from the city of Las Vegas through the Mora Valley to the town of Taos, a distance of 100 miles. The line has been surveyed and some preliminary work has been done on the road. Its construction would open up a most fertile part of the Territory, as well as large mining and timber industries.

A new railroad is also projected from Albany, Tex., through the city of Las Vegas and on to the northwest, but of its construction little can be said at this time, as the project has not taken definite shape, so far as I am advised.

Considering the proposed extensions referred to above, the following data will be interesting: The extension of the Chicago, Rock Island and Pacific from Liberal, Kans., to Carrizoza Station, on the El Paso and Northeastern Railway, will be about 370 miles in length. This will give the following distances from Chicago via that route to Los Angeles and from Chicago to the City of Mexico:

	Miles.
Chicago, Rock Island and Pacific Railway: Chicago to Liberal, Kans	930
To build: Liberal to Carrizoza, N. Mex	370
El Paso and Northeastern Railway:	
Carrizoza to El Paso	144
Chicago to El Paso	1,444
Southern Pacific Railroad:	
El Paso to Los Angeles	812
Chicago to Los Angeles	2,256
Mexican Central:	
El Paso to Mexico City	1,224
Chicago to Mexico City	2,668

The proposed extension of the Pecos Valley and Northeastern from Hagerman to El Paso would be about 180 miles. This would make the distances, via the Atchison, Topeka and Santa Fe, the Pecos Valley and Northeastern, and the proposed extension to El Paso, as follows:

	Miles.
Atchison, Topeka and Santa Fe: Chicago to Amarillo	1,043
Pecos Valley and Northeastern: Amarillo to Hagerman	229
To build: Hagerman to El Paso, about	180
Chicago to El Paso	1,452

It will thus be seen that this would give the Santa Fe a route to Mexico of the same length as the Rock Island after the latter shall have completed its Liberal extension and a route of 175 miles shorter than its present route by way of the Raton tunnel. Should the Santa Fe complete the route from central New Mexico to a connection with the Hagerman system at Roswell, it would have then another transcontinental connection with San Francisco, Cal., by way of its lines to Amarillo, Tex., the Hagerman system to Roswell, its own line from Roswell to its main line through New Mexico (this new connection would be about 200 miles), via the Santa Fe and Pacific into California. It is but a question of a short time that this last extension across New Mexico will be a fact.

Elevations on line of Atchison, Topeka and Santa Fe Railway in New Mexico.

Station name.	Elevation.	Station name.	Elevation.
	Feet.		*Feet.*
North Portal Tunnel	7,548.00	Levy	6,223.00
Lynn	7,525.00	Bond	6,203.00
Raton	6,597.00	Shoemaker	6,229.00
Otero	6,357.00	Kroenig	6,549.00
Dorsey	6,042.00	Azul	6,650.00
Maxwell City	5,864.00	Las Vegas	6,358.50
Toril	5,884.00	Blackwell	6,257.00
Rayado	5,947.00	Chapelle	6,043.00
Nolan	6,042.00	Ribera	5,996.50
Wagonmound	6,153.00	Fulton	6,502.00
Tipton	6,340.00	Rowe	6,781.00
Watrous	6,370.00	Fox	7,126.00
Onava	6,705.00	Canoncito	6,833.00
Arriba	6,451.00	Twichell	6,311.00
Romero	6,262.50	Ortiz	5,796.00
Sulsbacher	5,955.00	Waldo	5,591.00
Blanchard	6,357.00	Thornton	5,224.00
Sands	6,266.00	Elota	5,098.80
Gise	6,763.00	Bernalillo	5,009.00
Pecos	7,028.64	Albuquerque	4,910.00
Glorieta	7,415.00	Barr	4,869.00
Lamy	6,447.00	Los Lunas	4,809.00
Galisteo	6,000.00	Sabinal	4,720.00
Los Cerrillos	5,647.65	Alimillo	4,613.00
Rosario	5,383.00	Socorro	5,550.00
South Portal Tunnel	7,584.00	Arny	4,466.00
Hillside	7,028.00	Pope	4,530.00
Dillon	6,435.00	Crocker	4,688.50
Hebron	6,136.00	Cudder	4,664.00
Schomburg	5,951.00	Upham	4,516.38
Dover	5,796.00	Rincon	4,021.00
Springer	5,745.00	Tonuco	4,220.00
Colmor	5,901.00	Leasburg	3,918.00
Las Cruces	3,850.00	San Marcial	4,418.00
Mesquite	3,795.00	Lava	4,685.00
Berino	3,762.00	Engle	4,728.00
Deming	4,477.70	Aleman	4,622.00
Magdalena	6,609.00	Grama	4,306.00
Santa Rita	6,460.00	Detroit	4,016.40
Lake Valley	5,115.00	Selden	3,927.00
Blossburg	6,760.00	Dona Ana	3,879.00
Algodones	5,065.00	Mesilla Park	3,837.00
Alameda	4,957.00	Earlham	3,781.00
Abajo	4,898.00	Anthony	3,753.12
Isleta	4,856.00	Silver City	6,000.00
Belen	4,762.00	Whitewater	5,295.00
Lajoya	4,666.00	Nutt	4,759.00
Lemitar	4,584.00	Santa Fe	6,919.00
San Antonio	4,500.00	Las Vegas Hotsprings	6,611.00

REPORT OF THE COMMISSIONER OF PUBLIC LANDS.

SANTA FE, *July 24, 1900.*

SIR: In accordance with your request, I have the honor to submit herewith the transactions of this office from the date of its creation to the present time, covering a period of fifteen months.

The board held its first meeting on March 27, 1899, and entered upon its work of administering the laws, as prescribed by the legislative act approved March 16, 1899. I immediately instituted correspondence with both State and Territorial officials of the several land offices, with the object in view of formulating, from their years of experience, the best methods and system of keeping the records. I was instructed by the board to visit the Territorial board of public lands of Oklahoma as the result of an invitation extended by the officials of that Territory, but this was finally deemed unnecessary, as I had already obtained through their kind assistance much valuable information. However, it was finally deemed best for me to visit the Colorado State-land office before the final adoption of a system of records, and I was accordingly authorized to visit that office. These officials extended me much valuable assistance, and the knowledge thus obtained has been invaluable to this board.

A blank form of lease was adopted and submitted to the Interior Department for its approval, and much time was lost by the Department in approving the same. In the meantime many applications were being received by letter. A form of application was adopted, and was mailed to these applicants, as it was decided that no application would be entertained unless made out on this regular form prescribed by the board. It soon became evident, by the number of applicants for the same section, that to solve the question as to whom the award of lease should be made in such cases, the lease should be issued to the highest bidder, and the applicants were so advised. In October I mailed blank leases to the successful applicants, and on their return to me, properly executed, I at once forwarded the same to the Secretary of the Interior at Washington for his approval. The first shipment of leases, made on October 20, 1899, was not approved until December 28, and reached this office in the following January. Upon the return of these approved leases, the cash receipts represented by them were deposited at once with the Territorial treasurer.

There are now on file in the Department at Washington, awaiting the approval of the Secretary of the Interior, 206 leases, these leases representing a rental of $5,458.44 and an acreage of 131,760. Numerous complaints have been received at this office from these applicants on account of their failure to receive their duplicate leases. There is much foundation for these complaints, due to the fact that many of these leases were executed and forwarded to the Department at least eight months ago, and their second year's annual payment, represented by their first deferred payment note, will become due and payable before they will have received their duplicate leases. Had these leases been approved, as we had hoped, there would have been $12,098.11 available for apportionment to the common schools of the Territory by the superintendent of public instruction instead of $6,639.67. This result will compare very favorably with the first year's revenue derived from the leasing of school sections 16 and 36 in adjacent States and Territories, as shown by their statistics.

THE UNITED STATES COMMISSION.

This commission, consisting of the governor, the surveyor-general, and the solicitor-general of the Territory, acting under the direction of the Secretary of the Interior, was created to make selections of the lands granted to the Territory under the act of Congress approved June 21, 1898. Mr. D. M. White, the locating agent for the above commission, has notified this office that on September 21, 1899, November 6, 1899, and December 2, 1899, this commission made selections aggregating 220,679.23 acres, which were forwarded to Washington for the approval of the Secretary of the Interior. (See detailed list on following pages.) In the early part of June, 1900, we received, under the seal of the United States General Land Office, a certificate of the approval of selections to the amount of 16,741.97 acres for the establishment and maintenance of the Institution for the Blind. These are the only selections thus far reported to this office as approved. I regret very much the delay that has attended the approval of these selections made on behalf of the Territory. If they had been promptly approved after the expiration of the ninety days, which is the minimum time required by Department regulations to elapse between the date of filing and that of approval, these lands now would have been producing a revenue for the Territorial educational institutions; and it seems unfortunate that such delay should have been deemed necessary by the Department.

ADVANCE PAYMENT FOR THE PURCHASE OF LANDS.

The Alomogordo Lumber Company notified the board that they desired lands selected in the Sacramento Mountains, with the idea of ultimately purchasing the same, and offered to pay the United States land office fees for such selections as well as advance sufficient money from time to time to enable the Territory to select other lands; also, provide sufficient funds to conduct the work of this office, such payments to be considered as a part payment on final purchase of lands. Mr. Burkdoll and his associates made a similar proposition and it was accepted. This fund enabled the Territory to proceed in the selection of lands and the maintenance of its office. As a result the Territory has been able to select over 220,000 acres, as well as meet the necessary expense in leasing school sections 16 and 36, the receipts from which aggregated $12,098.11. Without this available fund from advance payments on contemplated sales, the Territory could not have leased or selected any lands until the receipt of the funds from the Territorial treasurer, derived from the Territorial tax levied to reimburse the board of public land fees, and which was levied in the year 1899, but which was not received until July, 1900. But even this fund thus created by taxation would not have been sufficient to pay the United States land office fees and our office expense—not including clerical assistance. The Territory is to be congratulated upon the fact that the means were provided at once for the successful and immediate carrying out of the work of this office, for which the legislature failed to provide.

FOREST RESERVATIONS.

After an interval of over fifty years as a Territory, a grant of about 5,000,000 acres, of which about 2,000,000 acres are to be selected, the balance being represented by school sections 16 and 36, was made to New Mexico by the Congressional act approved June 21, 1898. The selections thus far made on behalf of the Territory amount to about 220,000 acres. It is to be deplored that the Department at Washington, through its agents in the field, is reserving so much of our best lands before we can possibly select even a fractional part of our grant. The Gila Forest Reserve was created out of the best lands in the southwestern part of New Mexico, soon after the passage of the act of Congress granting lands to the Territory, and even before the organization of the United States commission to select lands on its behalf. This portion of the Territory, now known as the "Gila Forest Reserve," was particularly desirable for stock, as evidenced by the number of applications received for the leasing of school sections within said reservation. These reservations, as well as those reported to be contemplated, will deprive the Territory of a large part of its best lands (particularly before it becomes a State), thus defeating the object of the grant. When one considers the area in the Territory covered by grants to individuals, as well as by Government reservations, both those already made and those contemplated, there will be very little desirable land left to select for the Territorial educational institutions.

THE PALACE BUILDING.

Under act of Congress approved June 21, 1898, the building known as "The Palace," in the city of Santa Fe, together with all lands and appurtenances connected therewith, was granted to the Territory of New Mexico.

The west end of the building and adjoining rooms is occupied by the United States Government for its post-office, at a rental of $50 per month, from July 7, 1899, as per agreement entered into with Mr. Doran, post-office inspector, who was present at our regular meeting September 4, 1899. So far no portion of this rental has been paid, although the Acting First Assistant Postmaster-General, under date of November 1, 1899, stated, "I have the matter now under consideration." I have written the Department several times, but thus far with no satisfactory results. The central portion is occupied by the honorable secretary of the Territory as a residence. The eastern end is occupied by the historical society without charge for rent. That portion formerly occupied by the governor and secretary as offices is rented to Messrs. Newberry and Laughlin at a rental of $37.50 and $39, respectively, in advance, per quarter. The alfalfa grown on the land in the rear of the building during the season of 1899 and 1900 has been sold for $20.

It is to be hoped that the Government will deem it best to assume control of this historical building, the history of which is a national one, and in the maintenance of which one and all are alike interested, on account of its important historical traditions. Under the supervision of the Smithsonian Institution, as a western annex, it would receive the protection which is its due, and they alone are the proper custodians.

APPRAISAL OF LANDS.

Under date of June 28, 1900, the honorable Commissioner of the General Land Office forwarded to me an opinion of the honorable Assistant Attorney-General, rendered June 5, 1900, stating that the appraisal of lands to be leased is a necessary prerequisite to such leasing, which opinion was approved by the honorable Secretary of the Interior. The honorable Commissioner of the General Land Office at the same time notified me that all leases not heretofore approved are suspended until evidence is submitted in each case that the land has been appraised, and that all leases hereafter submitted must be accompanied by an affirmative showing that the lands leased have been so appraised. The framers of the act of the legislature state that it was their intention to leave the matter of appraisal to the discretion of the board, and it is to be regretted that the wording of the statute should have been subject to a different construction. The conditions in New Mexico are such that the question of the presence of water on a section alone fixes the value and rate of rental. Improvements determine the question of preference right and not the valuation of a section as to rate of rental. In the majority of instances improvements do not exist until the lessee has occupied the section, and even then they may not occur, as these school sections are strictly grazing lands and their value, as I have already stated, is determined by the existence or nonexistence of water thereon. The law is fully administered and the school fund thoroughly protected by the application blank furnished the applicant, who states therein under oath as to whether there is water of any description on the section for which he applies. When one considers the great distances to be covered by an appraiser to reach even the most accessible points away from the railroad, to which he would have to proceed by wagon, at a cost of $5 per day for conveyance only, it will readily be seen that the traveling expenses of the appraiser alone would more than exceed the revenue derived from the five years' rental. The majority of our leases thus far issued, approved or unapproved, are for sections located in Union County. By referring to the Government post-route map, it will be seen that an appraiser leaving Clayton to reach Gallegos would travel 83 miles; from Las Vegas to Endee, 162 miles; also from Las Vegas to Fort Sumner, 130 miles; from Roswell to Lincoln, 108 miles. These illustrations are from the nearest railroad points to the post-office address of lessees, and must be traversed by wagons. The facts ascertained by examination necessary to appraisal would not fix the rental value of the lands at a higher rental than without such examination, as all the facts necessary to fixing the rental of sections are ascertained from our application blanks. The present annual rental is $12.80 for a section without water and $32 for sections with water of any description thereon. When a higher rental exists, it is brought about by there having been more than one applicant for the same section, in which cases by bidding the rental has reached a much higher figure. I regret very much that this matter of appraisement was not determined upon on the receipt of the leases for approval in October last, rather than after an interval of ten months. Two hundred and fifty-nine leases have been approved without the requirement of appraisal, while 206 leases unapproved have been on file in Washington awaiting approval since January last. I would, therefore, respectfully recommend that the Department's ruling of June 28, 1900, be so modified that all unapproved leases, including those bearing date of July 2, 1900, be at once approved by the honorable the Secretary of the Interior.

Total grant of lands to the Territory of New Mexico by act of Congress, June 21, 1898.

["This act is intended only as a partial grant of lands" by the United States.]

		Acreage.
Common schools, sections 16 and 36 in every township for the support of common schools, 5,355 sections, not including those within land grants and reservations		3,427,200
Public buildings "at the capital of the State of New Mexico, for legislative, executive, and judicial purposes, when permanently located," 50 sections		32,000
University, 2 townships in quantity (together with all saline lands within the Territory):		
Act July 22, 1854	46,080	
Act June 21, 1898	65,000	
		111,080
Agricultural College		100,000
Water reservoirs for irrigation purposes		500,000
Improvement of the Rio Grande in New Mexico		100,000
Insane asylum		50,000
School of mines		50,000
Deaf and dumb asylum		50,000
Reform school		50,000
Normal schools		100,000
Institute for the blind		50,000
Miners' hospital		50,000
Military institute		50,000
Penitentiary		50,000
The building known as "the Palace," in the city of Santa Fe, and all lands and appurtenances connected therewith		2.60
Total		4,770,282.60

Selections of land made by the United States Commission under the act of Congress of June 21, 1898.

[Selections approved by the honorable Secretary of the Interior May 16, 1900.]

	Acreage.
List No. 1, institution for the blind:	
Grant County	5,001.98
Otero County	11,739.99
Total	16,741.97

Selections on file in the Department of the Interior not yet approved.

	Grant.	Santa Fe.	Socorro.	Otero.	Acreage.
Agricultural college	6,893.62				6,893.62
University			1,058.41		1,058.41
Water reservoirs for irrigating purposes	49,645.06				49,645.06
Insane asylum	4,737.89	908.56		11,254.20	16,900.65
Miners' hospital	5,001.04			11,355.11	16,356.15
Reform school	5,000.80			11,469.93	16,470.73
Penitentiary	5,009.46			10,250.88	15,260.34
School of mines	4,760.00			11,503.72	16,263.72
Normal schools	9,999.90			22,617.61	32,617.51
Military institute	5,000.00			11,473.63	16,473.63
Deaf and dumb asylum	5,000.00			10,997.44	15,997.44
Total	101,047.77	908.56	1,058.41	100,922.52	203,937.26

Aggregate selections approved	16,741.97
Aggregate selections unapproved	203,937.26
Total	220,679.23

Leases of common-school lands approved by the Secretary of the Interior.

County.	Leases.	Acres.	Amount of rental.
Bernalillo	5	3,200	$31.20
Chaves	39	24,960	1,305.80
Colfax	32	20,320	1,041.70
Donna Ana	5	3,200	152.60
Eddy	15	9,600	236.80
Grant	5	3,200	152.60
Guadalupe	7	4,480	128.00
Lincoln	6	3,840	115.20
Mora	15	9,440	460.80
Otero	3	1,920	128.00
Rio Arriba	1	640	12.80
Santa Fe	2	1,280	128.00
San Miguel	11	7,040	192.80
San Juan	2	1,280	50.60
Sierra	8	5,120	125.47
Socorro	5	3,200	140.80
Taos			
Union	95	60,640	2,282.10
Valencia	3	1,920	70.40
Total	259	165,280	6,755.67

Amount deposited with the Territorial treasurer, as per his receipts numbered 2 to 7, inclusive, on file in this office $6,755.67

Itemized as follows:

Receipt No.	When deposited.	Amount.
2	February 1, 1900	$4,010.00
3	March 5, 1900	44.80
4	March 6, 1900	2,447.27
5	March 29, 1900	124.80
6	May 2, 1900	12.80
7	June 30, 1900	116.00
		6,755.67

Leases of common-school lands unapproved on file in the Department of the Interior at Washington, D. C.

County.	Leases.	Acreage.	Amount of rental.
Bernalillo	3	1,920	$96.00
Chaves	20	12,800	852.00
Colfax	27	17,280	999.60
Donna Ana	4	2,560	95.43
Eddy	2	1,280	25.60
Grant	16	10,240	1,289.20
Guadalupe	11	7,040	161.10
Lincoln	7	4,480	145.20
Mora	11	7,040	163.00
Otero	2	1,280	44.80
Rio Arriba	....	....	....
Santa Fe	....	....	....
San Miguel	15	9,600	455.50
San Juan	2	1,280	50.11
Sierra	4	2,560	89.60
Socorro	13	8,320	277.60
Taos	....	....	....
Union	66	42,160	1,156.10
Valencia	3	1,920	57.60
Total	206	131,760	5,458.44

Approved applications, leases, and notes not yet signed by applicant.

County.	Leases.	Acreage.	Amount of rental.
Bernalillo	1	640	$6.45
Chaves	4	2,560	51.20
Colfax	2	1,280	25.60
Eddy	5	3,200	57.55
Grant	5	3,200	350.80
Guadalupe	3	1,920	57.60
Lincoln	2	1,280	100.25
San Miguel	1	640	6.40
Union	4	2,480	51.20
Total	27	17,200	707.05

Applications unapproved or withdrawn.

County.	Applications.	Acreage.	Amount.
Chaves	11	7,040	$221.80
Colfax	15	9,600	314.30
Donna Ana	3	1,920	44.80
Eddy	9	5,760	158.40
Grant	1	640	12.80
Lincoln	3	1,920	57.85
Mora	1	640	71.40
Otero	2	1,280	14.40
Santa Fe	1	640	160.00
San Miguel	2	1,280	66.65
San Juan	1	640	12.80
Socorro	4	2,560	425.60
Taos	1	640	12.80
Union	31	19,840	587.40
Valencia	1	640	12.80
Total	86	55,040	2,173.80

Leases canceled, relinquished, or withdrawn.

County.	Leases.	Acreage.	Amount.
Chaves	3	1,920	$38.40
Colfax	4	2,560	71.20
Eddy	2	1,280	25.60
Mora	5	3,200	142.95
Otero	1	640	25.60
San Miguel	6	3,840	76.30
Sierra	3	1,920	38.40
Union	1	640	6.40
Total	25	16,000	424.85

The historical building known as The Palace in the city of Santa Fe, and lands connected therewith.

RECEIPTS.

A. A. Newberry, three months' rent in advance from July 1, 1900, for office vacated by the governor	$37.50
N. B. Laughlin, three months' rent in advance from July 1, 1900, for office vacated by the secretary	39.00
Hank Fisher, alfalfa crop, grown in 1899	10.00
Antonio Alarid, alfalfa crop grown in 1900, part payment	4.50
Total	91.00

Five per cent of the proceeds of the sale of public lands within the Territory by the United States.

[To be used as a permanent fund, the interest of which only shall be expended for the support of the common schools within the Territory, section 4, act of Congress approved June 21, 1898 (Stat., 484).]

Jan. 23, 1900.	Received from the United States	$894.38
Jan. 23, 1900.	Amount deposited with the Territorial treasurer, as per his receipt No. 1 on file in this office	894.38

Advance payments for the sale of lands.

Sept. 18, 1889.	Alamogordo Lumber Company	$1,749.25
Nov. 27, 1899.	A. R. Burkdoll	1,250.00
Mar. 5, 1900.	Alamogordo Lumber Company	3,491.25
	Total	6,490.50

DISBURSEMENTS.

United States land office fees account Territorial selections.

[As evidenced by receipted vouchers on file.]

Institutions.	Acreage.	Amount fees.
Water reservoirs for irrigation purposes	49,645.06	$622
University	1,058.41	14
Agricultural college	6,893.62	....
Institution for the blind	16,741.97	212
Normal schools	32,617.51	412
Reform school	16,470.78	210
Military institute	16,473.63	208
Insane asylum	16,900.65	216
School of mines	16,263.72	206
Deaf and dumb asylum	15,997.44	204
Miners' hospital	16,356.15	208
Penitentiary	15,260.34	194
Total	220,679.23	2,706

Commissioner's office expenses for fifteen months ending June 30, 1900.

[As evidenced by receipted vouchers on file showing itemized expenditures.]

Books, stationery, typewriter, laws and regulations and printed circulars of instructions to applicants	$763.05
Express charges, telegrams, lock and keys	11.56
Government stamped envelopes, postage, and post-office box rent	187.47
Commissioner's salary for fifteen months	2,500.00
Expense attending the commissioner's authorized trip to State land office, Colorado	73.55
Clerical assistance	467.00
Total	4,002.63

Recapitulation.

RECEIPTS.

Leases of common-school lands approved by the Secretary of the Interior		$6,755.67
Leases on file in Department of Interior awaiting approval		5,458.44
Approved applications, leases, and notes not signed by applicants		707.05
Applications withdrawn	$2,173.80	
Leases withdrawn	424.85	
		2,598.65
Rentals of Palace Building		91.00
Five per cent proceeds sales public lands within the Territory by the United States		894.38
Advance payment for the sale of lands		6,490.50
University, account United States land office fees		334.00
Territorial tax levy fifty-first fiscal year account reimbursing board of public lands, for United States land office fees		3,835.31
Total		27,165.00

DISBURSEMENTS.

United States land office fees account selections	2,706.00
Territorial treasury	7,650.05
Commissioner's office expense	4,002.63
Refund account withdrawal of applications and leases	2,598.65
Cash on hand in First National Bank at Santa Fe	10,207.67
Total	27,165.00

Apportionment of common school income fund, by Hon. M. C. de Baca, superintendent of public instruction, according to the pro rata enumeration of school children in each county last returned by the county superintendent.

County.	Children of school age.	Apportionment.
Bernalillo	7,604	$958.86
Chaves	971	127.44
Colfax	2,808	354.09
Dona Ana	3,943	497.21
Eddy	939	118.41
Grant	3,109	392.04
Guadalupe	1,538	193.94
Lincoln	1,316	165.95
Mora	3,270	412.35
Otero	1,070	134.93
Rio Arriba	3,024	381.33
San Juan	907	114.37
San Miguel	7,336	925.07
Santa Fe	4,193	528.74
Sierra	1,113	140.35
Socorro	4,047	510.33
Taos	3,320	418.65
Union	1,468	185.11
Valencia	676	85.50
Total	52,652	6,639.67

Respectfully submitted.

ALPHEUS A. KEEN,
Commissioner of Public Lands.

Governor M. A. OTERO.

EDUCATION.

TERRITORY OF NEW MEXICO,
OFFICE OF SUPERINTENDENT OF PUBLIC INSTRUCTION,
Santa Fe, December 31, 1899.

SIR: In compliance with the provisions of law, I have the honor of submitting herewith to you my annual report as superintendent of public instruction of New Mexico for the year 1899.

Very respectfully,
M. C. DE BACA,
Superintendent of Public Instruction.

Hon. MIGUEL A. OTERO,
Governor of New Mexico.

New Mexico Territorial board of education.—Governor Miguel A. Otero, president, Santa Fe; Manuel C. de Baca, superintendent of public instruction, secretary, Santa Fe; C. L. Herrick, Albuquerque; F. W. Sanders, Las Cruces; Peter J. Schneider, Santa Fe.

County school superintendents.—Bernalillo: Frank A. Hubbell, Albuquerque. Chaves: E. O. Creighton, Roswell. Colfax: W. A. Chapman, Raton. Doña Ana: Jose Gonzales, Las Cruces. Eddy: A. U. Pratt, Carlsbad. Grant: B. T. Link, Silver City. Guadalupe: Desiderio Gallegos, Anton Chico. Lincoln: W. M. Clute, Lincoln. Mora: Saul Padilla, Wagon Mound. Otero: T. A. Biedleman, Alamogordo. Rio Arriba: Emilio Gonzales, Abiquiu. San Juan: A. Rosenthal, Farmington. San Miguel: Jose D. Martinez, Las Vegas. Santa Fe: F. F. Pino, Galisteo. Sierra: Frank L. Given, Hillsboro. Socorro: Anastacio Torres, Socorro. Taos: Francisco M. y Martinez, Taos. Union: N. F. Gallegos, Clayton. Valencia: Julian P. Connelly, Los Lunas.

Superintendents of city schools.—J. Martin, Roswell; R. H. Carter, Raton; M. R. Koehler, Silver City; Maggie J. Bucher, East Las Vegas; M. E. Hickey, Albuquerque; J. A. Woods, Santa Fe; W. W. Robertson, Deming.

Territorial institutions.—C. L. Herrick, president University of New Mexico, Albuquerque; F. W. Sanders, president Agricultural College, Las Cruces; C. M. Light, principal New Mexico Normal School, Silver City; T. A. Jones, director New Mexico School of Mines, Socorro; E. L. Hewett, president New Mexico Normal University, Las Vegas; Col. James G. Meadors, superintendent New Mexico Military Institute, Roswell; Lars M. Larson, superintendent School for Deaf and Dumb, Santa Fe.

HISTORY.

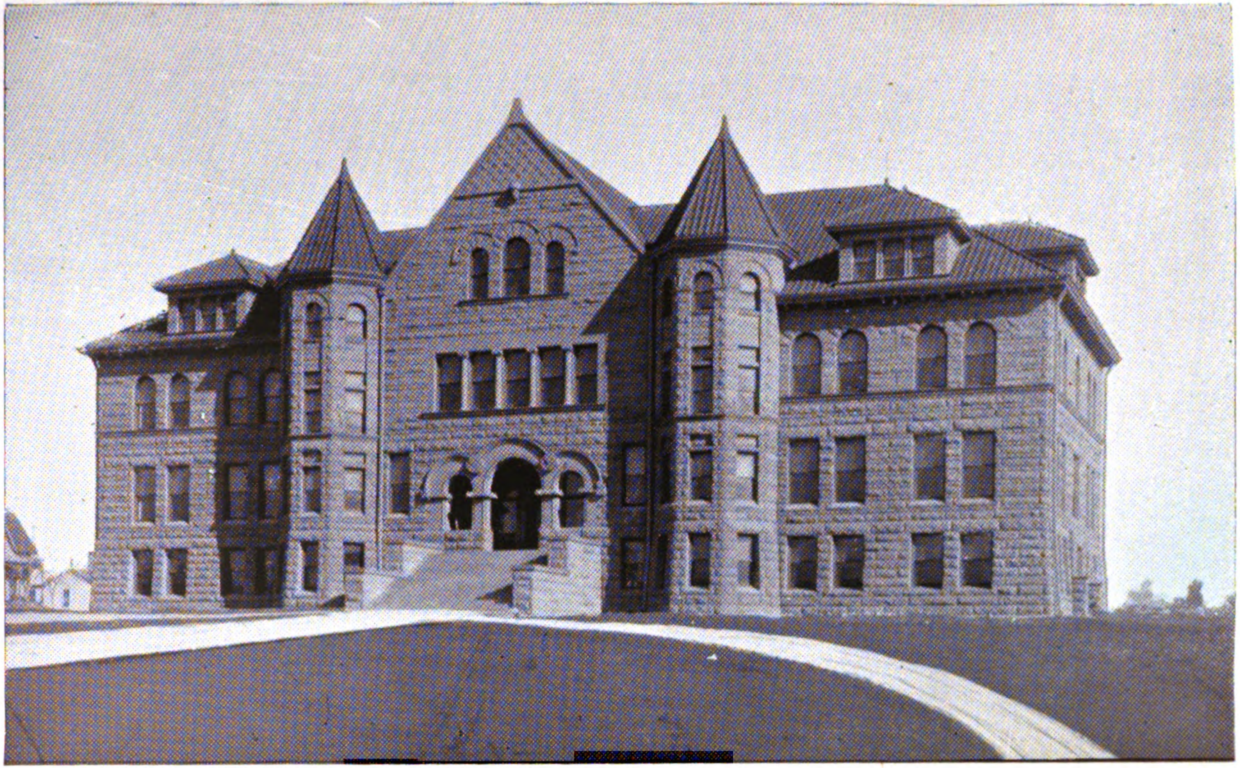
Investigation shows that New Mexico was settled by Spaniards in the year 1598. Previous to that time various expeditions sent by the Government of Spain had explored all the region now comprised within the boundaries of the Territory along the Rio Grande, but it was not until the 30th day of April, 1598, that formal possession was taken by Don Juan de Onate.

The objects for which possession was taken are stated at large in the act of possession, and they may be summarized as follows: "To reduce the country to the dominion of Spain; to settle and colonize it; to introduce into it all the necessary wagons, horses, oxen, sheep, and other live stock; to introduce the Spanish customs and laws, together with the Christian religion among the Indians; to civilize them, introducing among them the mechanical and industrial arts; to instruct them in the use of all those matters that would tend to their mental and moral advancement, and to assimilate them in such a way by the Spanish scheme of conquest that they might become a truly civilized people, learning everything that would increase their polity and happiness."

This colonizing expedition, comprising about four hundred men, among whom one hundred and fifty had their wives and children with them, carried with them all the implements and material for the building of a new civilization in the wilderness of the new country. They were accompanied by ten or twelve friars under the leadership of a commissary general.

In July of 1598 the first settlement was established at San Gabriel, near the locality where now stands the Indian pueblo of San Juan de los Caballeros, at the junction of the Chama and the Rio Grande. This place was the center of the Spanish government until, for various reasons, a short while afterwards, the settlement was transferred to Santa Fe, the present capital of the Territory.

Thereafter, the colony growing to such proportions that the valley lands of Santa Fe became too limited for their support, other towns were established, mainly in the vicinity of the pueblos along the Rio Grande, Rio Taos, and Rio Santa Cruz.



Normal University of New Mexico, Las Vegas, N. Mex.

The Spanish rule lasted until 1821. During that period the instruction of the Spanish and native children was in the hands of the Franciscans. However, from the very nature of their surroundings, and from their continual clashing with the haughty and domineering governors and civilians, little could be done by these clerical gentlemen for the educational cause. In 1777 a royal charter, supplemented in 1779 by a papal brief to the same effect, decreed the establishment of a college at Santa Fe. The buildings of the college were erected, and the lands for its maintenance were assigned; but just at that time the border savages became so hostile that the local government was taxed to the limit of its resources in repelling them, and nothing was done for the support of the college. The Indian troubles lasted until the beginning of the nineteenth century.

The star of Napoleon had by that time reached its zenith, and this restive warrior, having reared upon the ruins of the French Republic a dazzling and colossal empire, cast longing eyes upon the country beyond the Pyrenees and its rich possessions in the New World. As a consequence of the Napoleonic intervention in the Peninsula, the revolt of the Spanish colonies in America followed, and resulted, years afterwards, in the final establishment of separate and distinct republican governments.

Although New Mexico was too remote from the center of war to take any active part in it, nevertheless, it felt the effects of neglect in all its branches of industrial and educational affairs. And it is for this reason that we find New Mexico, at the ending of the Spanish rule, in practically the same condition as it was during the last century.

With the incoming of the republican government all regular clergy were expelled from the country, and the task of education devolved upon lay teachers. In this connection I will quote from the supplement of D. Jose Augustin de Escudero, to the memorial of Don Pedro Bautista Pino, this latter being the deputy for New Mexico to the Spanish Cortes. Escudero says, speaking in 1849, on the subject of schools in New Mexico: "At the residence of D. Juan Rafael Rascon, vicar-general, the young man, D. Guadalupe Miranda, confers upon the Territory the very special privilege of teaching several youths the elements of Spanish and Latin grammars and the rudiments of philosophy. The constancy and attainments of citizen Miranda can not be too much praised. And the progress made by his pupils also deserves encomium, more so from the fact that education encounters great obstacles there, from various causes, among which may be mentioned a scarcity of text-books. May heaven grant to New Mexico some institution of learning where its sons may receive educational training according to the requirements of the century."

In 1829 the Spanish population of New Mexico was 43,433, and it had 18 schools taught by 18 teachers.

In 1840 the population was 55,403, but I have been unable to find statistics giving the number of schools. One thing is certain, however, that at this period some of the Territorial schools were supported by private contributions altogether, and others were supported by private contributions and by government annual appropriations. Those schools so receiving government support were the following:

Santa Fe	$500.00
San Miguel del Bado	250.00
Canada	300.00
Taos	250.00
Albuquerque	300.00
Belen	250.00
Total	1,850.00

In 1848 New Mexico, by the treaty of Guadalupe-Hidalgo, became a part of the United States. Soon afterwards the Catholic Church commenced a good educational work, and endeavored to reach as many children as possible. The resources of the church, however, were not sufficient for the carrying on, in a satisfactory manner, of its noble work.

The Christian Brothers first opened St. Michael's College at Santa Fe in 1859. Other denominations soon followed with the establishment of day and boarding schools in different parts of the Territory. And in this manner all these pioneers of education prepared the way for the elaborate system that was soon to spread through the whole of the Territory. Under the influence of these sectarian schools the percentage of illiteracy was greatly reduced in a very few years.

BEGINNING OF OUR PUBLIC-SCHOOL EDUCATION.

Since 1850 we have had a Territorial organization under the United States and have, since that date, enjoyed the benefits of a free government. But the United States have neglected the education of our people, and we have been left to work out our own salvation as best we might under peculiar and difficult circumstances. We have found it possible, however, to make progress under a free government, and we have overcome many of our difficulties. The people of the Territory have always hungered after education, and have ever realized its power and importance; therefore, all those who could have sent their children to the Eastern cities for training in the best schools. But the bulk of the population have been without the opportunities of instruction, save the most elementary kind, until the year 1872, when the legislature of New Mexico passed the first Territorial school law.

This law provides for the establishment of public schools to be supported by taxation. From that time we have labored persistently and honestly to build up among us a public-school system, for the purpose of giving to every boy and girl in the Territory the opportunity of securing a good and substantial common-school training.

This said law provided a board of county school supervisors composed of five citizens for each county. It was empowered to have the sole and entire management, supervision, and control of the public schools within its respective county, and to make such rules and regulations for the government, system, and organization of said schools as should be most proper, suitable, and necessary for the local requirements and circumstances of each county. The control and expenditure of the school fund was left entirely to their judgment; they were intrusted with all matters relating to the schools, and a very broad discretion was left to them.

At the same session of the legislature another act was passed providing for a tax levy of 1 per cent on the assessed valuation of the property in the Territory, one-half per centum for Territorial purposes, one-fourth per centum for school purposes, and the remainder for county purposes. But this law was necessarily crude, and the best results could not be obtained. The amount of taxable property was limited, and it was not possible at once to step into a perfect school system that might compare favorably with the older systems of the Eastern States. The population being scattered over a large extent of country made it difficult to reach the children that might have been reached had they been closer together; again, the lack of sufficient funds was a very serious difficulty. Notwithstanding, schools were established in every precinct of the Territory, and the work of educating the masses was started in a very creditable manner.

In the year 1884 the legislature, being alive to the vital defects in the former law, repealed the same and enacted another entirely different one. This new act created the office of county school superintendent, and pointed out the various branches of elementary knowledge that should be taught. By this same law the school districts and the district school directors were established and created, and each school district was made a corporation with powers to act as a corporate body.

In 1891 the legislature, again amending and enlarging the school laws, established a Territorial board of education, composed of the governor, the Territorial superintendent of public instruction (this office being first created by this act), the president of St. Michael's College, the president of the University of New Mexico, and the president of the agricultural college at Las Cruces. The powers of said board are such that it has it within its power to greatly promote the educational cause, and it has done so by establishing and inaugurating many valuable and needed reforms.

This law of 1891 enacts that school boards must furnish the necessary schoolhouses, teachers, fuel, and supplies for the schools. It also provides for a tax levy on the taxable property in each district not to exceed 5 mills on the dollar of the assessed valuation. It provides, likewise, for a tax levy not to exceed 3 mills on the dollar of the assessed valuation of all the property in each county for school purposes, which shall be apportioned among the school districts, and the same is to be expended in teachers' salaries, etc. This law enacts that the school fund shall be kept separate from all other funds of the Territory.

It will be seen that a levy of 8 mills on the dollar is the maximum of taxation to create a school fund. Besides this, a poll tax of $1 on each able-bodied male person over the age of 21 years is also laid for school purposes. The law compels the attendance at school of all children between the ages of 8 and 16 years for no less than three months in each year.

The records of the office of the Territorial auditor having been destroyed by fire some years ago, it is not now possible for me to obtain statistics covering the entire period in which our public-school system has been in operation. Records are only available since the year 1891. Previous to that time all records pertaining to public educational matters in the Territory were in the custody of the Territorial auditor.

But I take pleasure, in this connection, in saying that since 1891 to this day the progress made by our schools is a matter of pride and satisfaction to the people of New Mexico.

In 1891 the amount of money raised for school purposes under the law reached $85,192.17; the average daily attendance was 12,397 pupils; the number of teachers employed was 407; the average length of school term for the Territory was three months in the year; the average daily attendance at each school was 34 pupils.

In 1895 $154,107.38 was raised for school purposes; the number of teachers employed was 538; the average daily attendance for the Territory was 15,081 pupils; the average daily attendance at each school was 28 pupils; the average length of school term was four months.

In 1898 the amount of money raised for school purposes was $182,178.18; the number of teachers employed was 541; the average daily attendance for the Territory was 16,558 pupils; the average daily attendance for each school was 30 pupils; the average number of months taught was 5.

In 1899 the amount of money raised for school purposes was $241,520; the number of schools was 513; the number of teachers employed, 575, of whom 358 were males and 217 were females; the enrollment for the year was 21,761 pupils; the number of months taught in the Territory was 2,070; the average number of months taught in each school was 4; the average daily attendance for each school was 42 pupils; the amount expended in the payment of teachers' wages aggregated $99,145.19, or an average of $39.19 monthly salary for each teacher.

The sum of $21,927 was expended for rent and fuel, and the sum of $13,183.71 was paid for repairing and maintenance of schoolhouses and school grounds.

TERRITORIAL INSTITUTIONS.

I beg to call particular attention to the reports of our Territorial institutions of learning. They will be found as a part of this report. The Territory boasts to-day of a university, a school of mines, a college of agriculture and mechanic arts, a normal university, a normal school, a military institute, and a school for the deaf, dumb, and blind. These institutions are thoroughly equipped in all particulars, and have made most satisfactory progress, as will be seen by the following extracts from the reports of the superintendents and principals of said schools:

The university.—This institution received for the year ending June, 1899, $11,804.35; enrollment was 170 pupils; it employed 16 teachers, and the number of months that school was taught was ten. Amount of salary paid teachers, $10,451.55; for rent and fuel, $4,550.96; value of property, $45,000.

New Mexico College of Agriculture and Mechanic Arts.—Received $48,090.48; had 177 pupils enrolled; taught nine months and employed 22 teachers; paid in teachers' salaries, $26,342.56, and for schoolhouses and grounds, $15,549; has property to the value of $89,000.

School of Mines.—Received $5,377.70; had an enrollment of 68 pupils; school was taught for nine months and employed 3 teachers; salaries, $3,713.32; rent and fuel, $1,329.52; has property to the value of $55,000.

Normal School of Silver City.—Received $4,852.94; had an enrollment of 85 pupils; taught ten months and employed 5 teachers; expended in teachers' salaries, $4,060.05; in rent and fuel, $1,716.60, and has property to the value of $20,000.

School for the Deaf, Dumb, and Blind.—Received $1,200; had an enrollment of 13 pupils; taught eight months; had 1 teacher, and expended in teacher's salary and fuel, $1,200; has property to the value of $5,000.

New Mexico Military Institute.—Received from the Territory, $6,500, and from private tuitions, $9,500; had an enrollment of 105 pupils; taught ten months during the year and employed 5 teachers; expended in teachers' salaries, $5,000; in light and fuel, $1,200; furnishing and repairs, $1,300; erection of buildings, $2,500; maintenance of subsistence and laundry department, $7,000, and has property to the value of $30,000.

New Mexico Normal University.—Received $11,020.53; has an enrollment of 197 pupils; taught nine months; employed 7 teachers; expended in teachers' salaries, $7,229.92; in light, fuel, furnishing, and repairs, $3,790.61, and has property to the value of $55,000.

CITY SCHOOLS.

The following are the statistics of the schools in the incorporated towns and cities of the Territory and not comprised in the report:

Albuquerque.—Received $25,948.99; had an enrollment of 1,013 pupils; employed 9 teachers; had 9 schools and taught nine months in each school; expended $12,753.50 in teachers' salaries and $7,396.33 for rent and fuel; has property to the value of $64,336.90.

Deming.—Received $8,262.95; had an enrollment of 769 pupils in 4 schools; employed 9 teachers, and taught nine months; expended $8,262 in teachers' salaries, rent, and fuel.

East Las Vegas.—Received $8,600.46; had 12 schools, with an enrollment of 696 pupils; employed 12 teachers; taught nine months; expended in teachers' salaries, $5,650; in rent and fuel, $2,390.94; has property to the value of $15,000.

Raton.—Received $4,667.10; had 4 schools, with an enrollment of 531 pupils; employed 11 teachers, and taught eight months; expended in teachers' salaries, rent, and fuel, $4,667.10, and had property to the value of $25,000.

Roswell.—Had an enrollment of 348 pupils; had 2 schools; employed 4 teachers; taught nine months in each school.

Gallup.—Received $10,554.70; has 7 schools, with an enrollment of 358 pupils; employed 7 teachers; taught nine and a half months in each school; expended in teachers' salaries, $5,171.20; rent and fuel, $1,927.08; houses and grounds, $1,345.95; has property to the value of $15,000.

Santa Fe.—Received $9,230; had nine schools; enrolled 520 pupils; employed 9 teachers, and taught eight months in each school; expended in teachers' salaries, $6,000; rent and fuel, $930; has property to the value of $5,000.

Silver City.—Received $5,608.38; had 6 schools, with an enrollment of 436 pupils; employed 6 teachers, and taught ten months; expended $4,150 in teachers' salaries; rent and fuel, $871.58; has property to the value of $8,000..

Socorro.—Received $1,913; had 2 schools, with an enrollment of 286 pupils; employed 5 teachers; taught four months in each school; expended in teachers' salaries, $575; rent and fuel, $406.71; has property to the value of $16,500.

Recapitulation.—It will be seen from the above figures that the enrollment in the common and city schools and Territorial institutions for the year 1898–99 was 27,173 pupils, as against 12,397 in 1891; an increase of 14,776 in seven years.

That the total amount of money raised in 1898–99 for common and city schools and Territorial institutions was $414,653.70, as against $85,192.17 in 1891; an increase of $329,460.53 in the same period of time.

That the total number of schools in the year 1898–99 was 576, as against 407 in 1891; an increase of 169 in the number of schools during that period.

That in 1898–99 there were 706 teachers, as against 407 in 1891; an increase in the number of teachers of 299 during that time.

That in 1898–99 the number of school months averaged about four months and eight days, as against an average of three months in 1891. (In this connection it is to be remarked that many schools were suspended in 1898–99 on account of the prevalence of contagious disease.)

That the average daily attendance for 1898–99 at each school was 42 pupils, as against 34 pupils in 1891.

That the amount of money expended in 1898–99 for teachers' salaries, at common and city schools and Territorial institutions, was $208,162.95.

Sectarian schools.—The Catholic Church supports 18 schools, attended by 1,602 pupils. It employs 72 teachers, and has school property to the value of $217,700.

The Methodist Church supports 11 schools, attended by 426 pupils, and has school property valued at $10,000.

The New West Educational Commission supports 5 schools, attended by 219 pupils, employs 7 teachers, and has school property to the value of $44,000.

The Presbyterian Church supports 25 schools, attended by 1,105 pupils. It employs 25 teachers, and has school property to the value of $37,900.

The average number of months taught by the sectarian schools is nine months in the year.

English.—In reference to the knowledge of the English language, the following facts will explain themselves and dispel the idea that English only to a slight extent is spoken in the Territory:

The census of 1890 gives 61.11 as the percentage of those unable to speak English. The same factors proving the decrease of illiteracy also prove the increase of the English language.

First, there is the death rate of the original settlers; second, an immigration of 70,000, all of which, with hardly an exception, speak English and are of Anglo-Saxon descent; third, a total enrollment, embracing seven years, of 150,000 in 513 schools, taught by 575 teachers, each and every one speaking and teaching English.

From the above facts a conservative estimate can be made proving that to-day the percentage of the inhabitants of the Territory unable to speak English will not at the utmost exceed 15 per cent.

Normal institutes.—The legislature of 1897 enacted a law authorizing the holding of normal institutes for the benefit of teachers. While that law is very defective in several vital points, it still is very gratifying to notice that various normal institutes have been successfully conducted in quite a number of counties of the Territory.

Educational association.—Before closing this report I must add a few words about the convention of the New Mexico Educational Association held at Santa Fe during the Christmas holidays of the past year. The meeting of this association at that time and place forms an epoch in our educational movement. Professors and teachers from all over the Territory, defraying their own expenses and many of them traveling over 300 miles, were present at that meeting. The convention lasted for three days, and the matters there discussed covered a wide range. Notable among the papers read was one by Prof. F. W. Sanders on the subject of "The educational aspect of the ideal in its relation to historic truth." All the leading residents of the capital city vied with each other in extending courtesies to the members of the association, and it was an event to be treasured up in the memory of all the citizens of New Mexico.

These annual gatherings of our teachers and educators can not but raise the standard of efficiency among them, and it is to be hoped that both the pulpit and the press will encourage them in their noble efforts. These men and ladies deserve the moral support of everybody. Finally, to all those who had the pleasure of attending the sessions of that convention one thing was apparent, and it is that if New Mexico is admitted into the Union as a State she need not fear to suffer by the comparison of her teachers with the teachers of the older Commonwealths.

District schools in New Mexico.

BERNALILLO COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages or 5 and 21 years.			Schools.	Months taught.	Receipts.			
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.
1	1	2	2	4	86	86	172	58	68	126	380	300	680	4	40	$850.64	$2,481.26	$137.82	$3,469.72
2	2	2	2	4	75	75	150	56	60	116	150	147	300	2	16	422.31	1,135.00	33.33	1,590.64
3	3	1	......	1	40	56	96	32	46	78	60	76	136	1	8	90.00	393.80	132.87	526.67
4	4	1	......	1	62	60	122	58	53	111	85	73	158	1	8	190.81	432.40	....	623.21
5	5	......	2	2	53	53	106	41	44	85	106	111	217	2	16	305.70	611.60	173.82	1,091.12
6	6	1	......	1	28	20	48	23	16	39	61	63	124	1	9	245.40	515.20	....	760.60
7	7	......	1	1	26	23	49	21	19	40	41	31	72	1	8	121.00	218.00	8.05	347.05
8	8	1	......	1	31	29	60	25	23	48	77	66	143	1	8	311.48	405.40	17.83	734.71
9	9	1	......	1	51	34	85	40	29	69	100	120	220	1	10	259.11	487.00	116.68	862.79
10	10	1	......	1	24	3	27	19	3	22	33	35	68	1	6	127.75	190.40	51.92	370.07
11	11	......	1	1	18	21	39	12	11	23	85	80	165	1	8	124.71	497.00	....	621.71
12	26	9	12	21	555	458	1,013	341	308	649	738	702	1,440	9	189	5,799.16	21,200.00	1,849.41	25,948.99
13	13–35	......	6	6	165	133	298	125	115	240	277	267	244	6	60	233.27	1,492.60	1,375.74	3,101.61
14	14	......	1	1	22	21	43	12	16	28	50	50	100	1	9	234.38	300.00	75.50	609.88
15	15	1	......	1	37	37	74	27	22	49	59	61	120	1	7	229.67	326.00	66.68	622.35
16	16	1	......	1	19	10	29	13	7	20	42	31	73	1	5	143.00	194.40	....	337.40
18	18	1	......	1	16	10	26	13	9	22	42	18	60	1	5	57.11	169.00	60.10	286.21
19	19	1	......	1	42	13	55	19	8	27	36	83	119	1	7	120.61	333.20	26.61	480.42
20	20	1	......	1	29	26	55	21	20	41	44	40	84	1	7	95.12	217.20	47.90	260.22
21	21	1	......	1	33	13	46	25	10	35	82	61	143	1	7	230.83	329.00	100.00	659.83
22	8	1	......	1	28	13	41	24	9	33	57	48	105	1	5	240.53	292.00	40.17	572.70
23	23	1	......	1	25	20	45	13	15	28	37	38	75	1	7	235.89	220.00	32.67	488.56
24	24	1	......	1	13	13	26	11	9	20	20	26	46	1	8	28.15	110.80	....	138.95
25	25	1	......	1	43	37	80	30	23	53	53	53	106	1	8	224.95	286.80	33.34	545.09
27	30	2	5	7	198	160	358	140	115	255	225	280	505	7	65	1,145.78	8,634.00	774.92	10,554.70
28	28	1	......	1	29	17	46	27	13	40	77	50	127	1	9	319.36	355.60	93.66	768.62
29	18	......	1	1	8	24	32	8	20	28	24	56	80	1	5	148.00	235.00	60.39	443.39
31	31	......	1	1	21	13	34	17	10	27	30	15	45	1	4	94.50	126.00	....	220.50
32	32	1	......	1	20	23	43	18	19	32	45	47	92	1	5	242.48	256.60	....	499.08
33	33	1	......	1	21	23	44	19	19	38	43	52	95	1	6	268.10	269.00	16.67	553.77
34	22	......	1	1	12	16	28	10	5	15	19	13	32	1	4	62.17	89.60	25.47	177.24
35	3	1	......	1	22	26	48	20	23	43	46	30	76	1	7	1,228.84	212.80	38.28	479.92
36	4	1	......	1	20	33	53	17	25	42	41	39	80	1	7	298.30	216.00	....	559.30
37	23	1	......	1	8	10	18	6	9	15	20	17	37	1	6	88.13	99.60	6.22	193.95
39	23	1	......	1	21	22	43	19	17	36	33	33	66	1	6	132.33	156.20	11.12	299.65
40	37	......	1	1	32	31	63	29	27	56	43	36	79	1	9	544.34	185.20	569.85	1,299.39

41	22	......	1	1	15	24	39	11	17	28	20	24	44	1	6	19.29	125.20	13.39	157.88
42	20	1	......	1	30	29	59	27	23	50	52	36	88	1	6	120.67	243.40	18.76	382.83
43	16	1	......	1	12	19	31	7	11	18	28	18	46	1	4	55.31	121.80	....	177.11
44	7	1	......	1	24	13	37	12	12	24	30	18	48	1	5	147.00	143.00	....	290.00
45	22	1	......	1	20	21	41	18	17	35	28	32	60	1	6	105.42	162.00	13.84	281.26
46	24	1	......	1	17	13	30	14	12	26	20	22	42	1	4	37.55	100.60	....	138.15
47	34	1	......	1	31	30	61	28	27	55	75	76	151	1	8	252.91	408.80	....	661.71
48	28	1	......	1	26	20	46	20	15	35	56	41	97	1	7	194.00	258.60	34.32	486.92
51	17	1	1	2	52	39	91	30	35	65	111	94	205	2	14	416.87	587.00	270.43	1,274.30
52	17	2	......	2	25	18	43	24	17	41	62	55	117	2	10	46.29	310.60	62.90	419.79
53	21	......	......	......	......	......	......	......	......	......	......	......	......	......	......	59.28	71.00	146.95	40.00
54	10	1	......	1	28	36	64	10	18	28	28	36	64	1	5	94.54	169.20	32.76	296.50
55	16	1	......	1	16	11	27	13	10	23	18	15	33	1	3	33.36	89.00	6.72	129.08
Total (49)	50	50	38	88	2,229	1,935	4,164	1,599	1,370	2,969	3,889	3,715	7,604	74	667	13,174.82	46,508.86	6,446.81	66,130.49

District.	Expenditures.				On hand.	List of studies.							Value of property.
	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.		Reading and spelling.	Writing.	Grammar.	Geography.	Arithmetic.	United States history.	Physiology and hygiene.	
1	$2,324.75	$131.98	....	$2,456.73	$1,012.99	129	123	45	64	103	31	27	....
2	577.70	259.12	....	836.82	753.82	85	75	37	37	56	20	10	$1,300.00
3	310.00	103.15	....	413.15	203.52	86	75	35	35	58	23	12	....
4	281.25	116.45	....	397.70	225.51	102	86	27	27	47	13	13	800.00
5	690.75	182.19	....	872.94	218.18	49	47	30	28	41	17	10	1,200.00
6	450.00	142.50	....	168.10	592.50	48	21	13	13	35	10	5	300.00
7	210.00	41.00	....	251.00	96.05	19	19	3	7	19	7	3	250.00
8	310.00	83.70	....	393.70	341.01	23	27	6	8	21	3	3	....
9	440.00	42.75	....	482.75	380.04	85	51	12	15	51	10	10	700.00
10	210.00	54.00	....	264.00	106.07	19	17	3	3	17	3	3	....
11	320.00	186.10	....	506.10	115.61	32	27	8	16	30	8	10	....
12	12,753.50	7,396.33	....	20,149.83	5,799.16	....	....	....	....	....	....	....	64,336.90
13	2,362.50	20.00	....	2,382.50	719.11	65	33	27	27	33	20	20	....
14	235.00	48.00	....	283.00	826.88	30	21	3	3	15	3	3	250.00
15	280.00	33.00	....	313.00	309.35	40	27	2	2	18	2	2	250.00
16	138.00	34.55	....	172.55	164.85	13	7	....	....	10	....	....	....
18	160.00	27.90	....	187.90	96.31	13	10	....	8	13	1	....	....
19	225.00	26.40	....	251.40	229.02	41	33	7	13	41	7	10	....
20	220.00	51.50	....	271.50	88.72	30	22	8	8	19	8	5	....
21	385.95	93.00	....	478.95	180.88	35	27	8	9	22	3	10	250.00
22	180.00	44.00	....	224.00	348.70	39	28	7	7	27	5	6	....
23	210.00	82.55	....	229.55	196.01	45	36	8	8	29	6	6	....
24	79.95	13.00	....	92.95	46.00	26	20	9	12	23	9	9	....
25	210.00	....	....	210.00	335.09	61	54	13	13	54	13	13	250.00
27	5,171.20	1,927.08	$1,345.95	8,444.23	2,110.27	....	....	....	....	....	....	....	1,500.00
28	270.00	145.13	....	415.13	353.49	46	40	13	13	35	13	13	400.00
29	215.00	35.00	....	250.00	193.39	17	15	3	3	15	3	7	800.00
31	95.00	....	....	95.00	125.50	21	20	3	3	9	2	3	....

District schools in New Mexico—Continued.

BERNALILLO COUNTY—Continued.

District.	Expenditures.				On hand.	List of studies.							Value of property.
	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.		Reading and spelling.	Writing.	Grammar.	Geography.	Arithmetic.	United States history	Physiology and hygiene.	
32	$255.00	$64.80	....	$319.80	$179.28	29	25	8	8	27	8	10	$120.00
33	240.00	78.95	....	318.95	234.82	44	20	9	9	30	8	7	....
34	127.00	25.00	....	152.00	25.24	10	10	....	....	7	....	....	....
35	210.00	94.75	....	304.75	175.17	48	28	11	10	30	7	10	....
36	189.00	84.65	....	273.65	285.65	43	29	5	6	30	9	10	....
37	120.00	....	....	120.00	73.95	18	18	3	3	18	7	7	....
39	125.00	34.65	....	159.65	140.00	30	30	5	5	25	3	3	....
40	600.00	137.82	....	737.92	561.47	54	27	15	15	29	15	15	400.00
41	100.00	12.50	....	112.50	45.88	39	27	7	7	35	7	15	....
42	310.00	45.95	....	355.95	26.88	40	40	7	5	40	5	5	250.00
43	100.00	20.50	....	120.50	56.61	27	27	8	3	20	3	3	....
44	100.00	48.00	....	148.00	142.40	32	30	5	5	30	5	5	....
45	125.00	66.90	....	191.90	89.36	41	41	5	5	32	5	5	....
46	78.75	12.00	....	90.75	47.40	27	27	3	3	27	3	3	....
47	360.00	96.45	....	456.45	205.26	29	29	8	8	29	8	8	....
48	240.00	53.35	....	293.35	198.35	40	40	10	10	40	10	10	350.00
51	651.00	189.70	....	840.70	433.60	32	32	21	21	30	15	10	....
52	260.00	58.00	....	318.00	106.79	40	40	12	12	41	12	12	....
53	....	....	....	40.00	106.95	....	....	....	....	....	....	....	400.00
54	130.00	160.00	....	146.00	150.50	60	60	14	14	61	14	12	60.00
55	60.00	....	....	60.00	69.08	10	10	....	5	10	5	....	....
Total (49)	33,736.30	12,455.35	$1,345.95	47,537.60	18,592.89	....	....	....	....	....	....	....	86,666.90

CHAVES COUNTY

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Rece'pts.			Expenditures.	On hand.	List of studies.						
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Total.			Reading and spelling.	Writing.	Grammar.	Geography.	Arithmetic.	United States history.	Physiology and hygiene.
1	1	1	4	5	149	199	348	186	158	289	259	249	508	2	9	....	....	....	....	....	....	....	....	....	....	....	....
2	1	....	1	1	20	22	42	16	10	26	21	31	52	1	7	$480.94	$560.93	$1,041.87	$488.92	$602.95	1	1	1	1	1	1	1
3	3	....	1	1	7	5	12	8	2	5	18	12	30	1	4	282.71	421.13	703.84	138.00	565.84	1	1	1	1	1	1	1
4	3	....	1	1	2	2	4	1	2	3	11	13	24	1	6	106.08	600.38	706.46	100.00	606.46	1	1	1	1	1	1	1
5	8	....	....	....	....	....	....	....	....	....	9	11	20	1	....	212.00	498.82	710.82	30.00	680.82	1	1	1	1	1	1	1
6	2	1	1	2	33	34	67	27	29	56	44	40	84	1	9	198.49	1,739.96	1,938.45	591.10	1,347.35	1	1	1	1	1	1	1
7	2	....	2	2	9	11	21	7	9	16	25	20	45	1	5	64.89	851.28	1,235.37	1,051.81	502.81	1	1	1	1	1	1	1
8	8	....	....	....	....	....	....	....	....	....	13	18	31	1	....	62.74	391.44	454.18	....	454.18	1	1	1	1	1	1	1
9	3	....	1	1	7	11	18	5	9	14	27	30	57	1	6	266.81	252.82	519.63	175.00	344.68	1	1	1	1	1	1	1
10	1	1	....	1	10	12	22	6	7	13	20	26	46	1	9	123.78	609.52	733.30	299.62	433.68	1	1	1	1	1	1	1
11	....	....	....	....	....	....	....	....	....	....	17	18	35	1	....	144.46	299.30	418.76	95.00	318.76	1	1	1	1	1	1	1
12	2	....	1	1	12	15	27	9	12	21	20	19	39	1	....	65.22	446.97	512.19	548.54	548.54	1	1	1	1	1	1	1
13[1]	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	266.74	....	....	....	....	....	....	....	....	....	....
14[1]	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
15[1]	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	166.08	166.08	150.00	16.08	....	....	....	....	....	....	....
16[1]	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Total (16)	....	3	12	15	249	311	561	290	234	524	484	487	971	17	55	3,081.74	6,505.30	9,587.04	3,663.48	5,878.56	....	....	....	....	....	....	....

[1] Organized Sept. 1, 1899. Formerly part of Lincoln County. No report last year.

District schools in New Mexico—Continued.

COLFAX COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
1	1	....	2	2	51	45	96	33	35	68	108	113	221	1	9	$765.82	$420.10	$338.51	$1,524.43	$760.00	$79.47	$839.47	$684.96
2	2	....	1	1	9	11	20	3	6	9	14	13	27	1	2	96.08	59.40	64.00	219.48	70.00	....	70.00	149.48
3	3	....	1	1	27	19	46	14	11	25	64	45	109	1	7	463.24	374.00	163.93	1,001.17	225.00	6.00	331.00	770.17
4	14	....	2	2	25	26	51	18	19	37	38	38	76	1	4½	267.97	198.00	72.56	538.53	196.25	14.85	211.10	327.43
6	17	1	....	1	7	10	17	4	6	10	25	28	53	1	2	193.05	116.60	....	309.65	60.00	12.50	72.50	237.15
7	4	....	1	1	12	16	28	11	10	21	16	17	33	1	4	163.45	92.40	....	255.85	25.00	....	25.00	230.85
8	11	....	1	1	10	15	25	8	11	19	12	19	31	1	3	82.29	143.00	203.28	428.57	240.40	4.00	244.40	184.17
9	5	1	....	1	8	9	17	6	7	13	17	10	27	1	7	167.92	185.20	....	353.12	140.00	18.00	158.00	195.00
10	21	....	1	1	22	16	38	15	10	25	25	35	60	1	4	147.42	132.00	....	279.42	200.00	....	200.00	79.42
11	6	2	9	11	261	270	531	236	261	497	222	644	866	4	8	1,540.64	1,288.60	1,837.86	4,667.10	(1)	(1)	(1)	(1)
14	22	....	1	1	20	24	44	9	12	21	25	30	55	1	3	81.06	176.80	51.48	309.70	96.25	....	102.29	207.41
15	15	1	....	1	17	14	31	8	10	18	33	37	70	1	3	99.56	105.60	....	205.16	90.00	4.25	94.25	110.91
18	7	1	....	1	4	8	12	2	3	5	20	30	50	1	3	128.20	110.00	....	238.20	150.00	6.00	156.00	82.20
19	21	....	1	1	13	15	28	5	9	14	42	41	83	1	4	172.15	147.40	....	319.55	120.00	....	120.00	199.55
20	10	1	....	1	14	22	36	7	10	17	49	32	81	1	5	103.13	167.20	9.17	279.50	127.75	15.00	142.75	136.75
23	18	1	....	1	5	3	8	2	3	5	12	18	30	1	4	110.62	66.00	23.04	199.66	173.25	5.28	178.53	21.13
24	12	2	1	3	61	60	121	39	26	65	134	112	246	1	5	1,358.64	416.90	863.29	2,638.83	648.50	1,189.24	1,837.74	801.09
26	18	....	1	1	12	14	26	5	7	12	42	38	80	1	8	1,019.84	158.40	369.97	1,548.21	437.50	64.05	501.55	1,046.66
27	16	1	2	3	47	49	96	22	42	64	119	101	220	2	8	535.17	484.00	108.12	1,127.29	650.00	562.63	1,212.63	85.51
28	15	1	....	1	11	21	32	7	14	21	44	26	70	1	3	160.62	138.60	1.73	300.95	150.00	....	150.00	150.95
30	5	1	....	1	13	13	26	9	12	21	23	13	36	1	7	274.28	101.20	....	375.48	247.10	7.75	254.85	120.63
31	1	1	....	1	5	4	9	4	4	8	20	15	35	1	4	283.07	77.00	....	360.07	225.00	....	225.00	135.07
32	8	1	....	1	22	6	28	20	3	23	20	28	48	1	4	198.94	105.60	....	304.54	120.00	13.00	133.00	171.54
36	21	1	....	1	23	15	38	13	11	24	29	18	47	1	3	154.48	99.00	19.01	272.49	105.00	....	105.00	167.49
37	21	....	1	1	18	20	38	16	14	30	27	34	61	1	3	152.90	182.60	28.80	364.30	105.00	28.80	133.80	230.50
39	19	1	....	1	9	15	24	7	11	18	46	47	93	1	5	257.82	156.20	4.04	418.06	253.94	8.40	262.34	155.72
Total (26)	26	17	25	42	728	741	1,469	514	890	1,404	1,226	1,582	2,808	30	122	8,978.36	5,702.80	4,149.25	18,830.41	5,715.94	1,745.26	6,961.20	11,869.21

---

[1] Entire amount paid to city treasurer.

DOÑA ANA COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
1	2	1	1	2	34	31	65	20	17	37	69	62	131	1	8	$223.18	$233.45	$59.10	$515.73	$302.65	$45.95	$59.00	$407.60	$108.13
2	3, 20	....	5	5	202	86	288	131	57	188	445	377	822	2	6	1,070.28	1,206.40	931.80	3,208.48	1,590.00	267.47	324.75	2,182.22	1,026.24
3	19	....	1	1	26	16	42	10	11	21	43	36	79	1	6	147.39	120.35	141.00	408.74	250.00	9.76	....	259.76	148.98
4	22	....	1	1	16	10	26	10	6	16	92	89	181	1	3	127.02	179.80	19.56	326.38	120.00	21.38	....	141.38	185.00
5	8	....	1	1	28	30	58	18	18	37	87	88	175	1	5	123.95	271.15	38.40	433.50	175.00	12.50	....	187.50	246.00
6	15	....	1	1	16	10	26	11	11	23	82	79	161	1	2	123.30	200.10	8.00	331.40	60.00	25.65	50.00	135.65	195.75
7	11	1	....	1	23	16	39	17	7	24	56	48	104	1	3	62.05	101.50	41.60	212.12	105.00	65.55	....	170.55	41.57
8	10	....	2	2	54	29	83	35	20	55	120	90	210	1	4	378.54	126.00	160.00	664.54	593.65	35.89	35.00	664.54	....
9	14	1	....	1	....	....	......	....	....	....	68	61	129	1	4	300.51	65.40	343.34	709.25	370.00	....	339.25	709.25	....
10	16	....	1	1	42	28	70	38	20	58	150	108	258	1	8	311.59	317.55	55.77	684.91	407.50	82.20	....	489.70	195.21
11	12	1	....	1	27	27	54	17	17	35	63	77	140	1	6	66.56	163.85	76.20	306.61	200.00	40.05	....	240.05	66.56
12	4-5	....	1	1	70	53	123	31	29	61	231	194	425	2	5	152.98	616.25	5.47	774.70	460.90	46.00	....	506.90	267.80
13	7	....	1	1	7	8	15	3	4	7	52	52	104	1	4	188.94	145.00	....	333.94	140.00	10.00	....	150.00	183.94
14	1	....	1	1	13	8	21	8	5	13	25	22	47	1	3	8.25	21.75	70.00	100.00	80.00	....	....	80.00	20.00
15	21	1	....	1	34	29	63	18	18	37	56	56	112	1	3	29.76	46.20	70.83	146.79	146.79	....	....	146.79	....
16	18	....	1	1	16	16	32	9	7	16	79	74	153	1	5	267.66	229.10	26.10	522.86	175.00	27.10	....	202.10	320.76
17	18	....	1	1	9	4	13	6	3	9	64	41	105	1	2	29.39	72.50	....	101.89	59.00	....	....	59.00	42.89
18	23	....	1	1	7	6	13	2	1	4	30	30	60	1	4	169.54	33.00	....	202.54	188.94	13.60	....	202.54	....
19	22	1	....	1	12	12	24	8	9	17	34	24	58	1	3	77.22	112.10	5.00	224.32	100.35	....	....	100.35	123.79
20	2	....	1	1	6	7	13	4	6	11	26	16	42	1	3	46.94	89.90	8.00	144.84	100.00	....	....	100.00	44.84
21	2	....	1	1	11	12	23	8	8	17	38	38	76	1	3	27.44	91.35	21.50	140.29	75.00	2.00	....	77.00	63.29
22	13	....	....	....	....	....	......	....	....	....	11	19	30	....	....	20.35	52.20	16.00	88.55	31.00	....	....	31.00	57.55
23	14	....	....	....	....	....	......	....	....	....	33	28	61	....	....	112.14	27.00	14.21	153.35	120.35	33.00	....	153.35	....
24	17	....	1	1	33	30	63	30	26	57	77	37	114	1	2	....	68.40	146.00	214.40	214.40	....	....	214.40	....
25	21	....	....	....	....	....	......	....	....	....	20	21	41	....	....	15.30	24.60	5.50	45.40	30.10	15.30	....	45.40	....
27	9	....	....	....	....	....	......	....	....	....	36	28	64	....	....	58.07	28.80	....	86.87	....	86.87	....	86.87	....
28	6	1	....	1	12	15	27	5	9	15	38	23	61	1	3	16.80	81.20	....	98.00	82.50	3.00	....	85.50	62.50
31	23	....	....	....	....	....	......	....	....	....	......	......	......	....	....	42.71	....	....	42.71	....	....	....	....	42.71
Total (28).	30	7	22	29	698	483	1,181	439	309	748	2,125	1,818	3,943	25	95	4,204.83	4,754.90	2,263.38	11,223.11	6,128.13	843.27	808.00	7,779.40	3,443.71

District schools in New Mexico—Continued.

EDDY COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
Carlsbad	1	....	5	5	122	105	217	59	56	115	166	124	290	5	6	....	$2,457.28	$4,188.71	$6,645.99	$2,490.00	$80.40	[1]$1,620.34	$6,645.99	$2,455.25
Mexican	1	1	....	1	22	17	39	12	6	18	30	26	56	1	6									
Colored	1	1	....	1	7	3	10	5	2	7	10	5	15	1	6									
1	1	....	1	1	16	11	27	12	8	20	40	29	69	1	7	$262.54	390.18	843.11	1,495.83	200.00	249.72	....	1,495.83	1,096.11
2	2	1	....	1	12	16	28	5	7	12	20	12	32	1	7	133.35	180.96	110.31	424.62	315.00	18.18	25.00	424.62	66.44
3 and 4	2	1	....	1	....	....	....	....	....	....	19	30	49	1	6	58.63	277.08	....	335.71	....	....	....	335.71	335.71
5	1	1	....	1	....	....	....	....	....	....	13	9	22	1	6	73.00	124.41	....	197.41	140.00	....	....	197.41	54.41
6	1	....	....	....	....	....	....	....	....	....	14	9	23	....	....	21.30	130.06	....	151.36	....	....	....	151.63	151.63
7	3	1	....	1	20	19	39	13	10	23	37	26	63	1	9	12.29	356.24	....	368.53	100.00	8.70	....	368.53	259.83
8	4	1	....	1	29	13	42	18	7	25	37	22	59	1	6	34.42	333.65	....	368.07	120.00	10.00	....	368.07	238.07
9	4	1	....	1	20	18	38	16	14	30	25	27	52	1	6	38.02	294.06	....	362.08	100.00	....	....	362.08	262.08
10	1	....	1	1	19	16	35	13	10	23	61	42	103	1	9	607.35	582.45	228.69	1,418.49	300.00	35.73	50.00	1,418.49	1,032.76
11	2	....	1	1	9	11	20	8	10	18	13	16	29	1	6½	127.48	163.99	411.07	702.54	217.00	28.56	100.00	702.54	356.98
12	3	1	....	1	8	5	13	5	4	9	23	13	36	1	6	9.82	208.58	35.01	248.41	....	28.09	....	248.41	220.32
13	1	....	1	1	20	13	33	11	6	17	28	13	41	1	7	13.95	231.86	13.50	259.31	140.00	7.08	....	259.31	112.23
Total (16)	28	9	9	18	294	247	541	117	140	317	536	403	939	18	93½	1,422.15	5,725.80	5,830.40	12,978.35	4,122.00	466.46	1,795.34	5,783.80	7,194.55

[1] Interest on bonds, $1,150.

GUADALUPE COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.			Expenditures.	On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Total.	Teachers' wages.	
1	1	1	......	1	31	36	67	25	25	50	52	62	114	1	3	$0.90	$38.31	$39.21	$56.50	....
2	2	1	1	2	64	33	97	55	28	83	102	98	200	2	7	68.47	158.87	227.34	217.50	$9.84
3	3	1	......	1	35	16	51	30	14	44	37	32	69	1	3	4.00	34.48	38.48	78.00	....
4	4	1	......	1	59	25	84	39	16	55	89	73	162	1	3	16.17	93.62	109.79	210.00	....
7	5, 6	......	......	......	......	......	......	......	......	......	35	26	61	......	......	16.00	29.21	45.21	....	41.21
8	7	2	......	2	43	16	59	35	12	47	75	50	125	2	6	....	81.26	81.26	168.00	....
9	8	1	......	1	18	6	24	15	4	19	27	25	52	1	3	....	24.89	24.89	90.00	....
11	9	1	1	2	37	19	56	29	15	44	63	50	113	2	4	414.21	54.09	468.30	210.00	258.30
12	11	1	......	1	36	11	47	30	10	40	135	115	250	1	3	....	80.44	80.44	75.00	5.44
13	12	......	......	......	......	......	......	......	......	......	24	20	44	......	......	15.40	21.06	36.46	....	36.46
14	12	1	......	1	35	......	35	31	......	31	32	28	60	1	3	3.31	44.07	47.38	120.00	....
15	16	1	......	1	35	10	45	28	8	36	37	35	72	1	3	6.55	50.27	56.82	55.50	1.32
16	13	1	......	1	12	14	26	8	10	18	18	19	37	1	3	99.74	50.00	149.74	135.00	14.74
17	......	......	......	......	......	......	......	......	......	......	33	30	63	......	......	78.87	45.82	124.69	....	124.69
18	......	......	......	......	......	......	......	......	......	......	22	22	44	......	......	79.89	18.16	98.05	....	98.05
19	......	......	......	......	......	......	......	......	......	......	37	35	72	......	......	41.56	34.47	76.03	....	76.03
Total (16)	15	12	2	14	405	186	591	325	142	467	818	720	1,538	14	41	845.07	889.02	1,734.09	1,415.50	666.08

District schools in New Mexico—Continued.

GRANT COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
1	1	1	1	2	60	42	102	29	20	49	101	108	204	1	11	$468.70	$2,298.70	$89.10	$2,856.50	$1,300.00	$148.90	....	$1,448.90	$1,407 60
2	1	....	1	1	14	16	30	10	15	25	16	20	36	1	7	132.42	395.60	6.00	434.02	350.00	27.65	....	377.65	56.37
3	2	1	2	3	83	49	132	49	36	85	195	128	323	1	10	46.37	2,299.24	86.00	2,431.61	1,900.00	114.65	$75.00	2,089.65	341.96
4	3	....	5	5	....	....	....	....	....	....	400	369	769	1	....	....	8,262.95	....	8,262.95	....	....	....	....	8,262.95
5	4	....	....	....	....	....	....	....	....	....	31	29	60	1	....	....	853.94	....	853.94	....	....	....	....	853.94
6	4	....	1	1	10	14	24	5	7	12	26	20	46	1	5	151.70	426.78	....	578.84	250.00	15.75	....	265.75	312.73
7	5	....	1	1	42	42	84	40	36	76	74	64	138	1	3	754.79	1,552.68	58.00	2,365.47	180.00	58.00	....	238.00	2,127.47
8	6	1	....	1	8	13	21	5	7	12	22	21	43	1	5	225.81	482.95	46.32	755.08	240.00	9.00	....	249.00	506.08
9	7	1	....	1	8	6	14	5	3	8	20	27	47	1	4	130.90	435.85	4.00	570.75	180.00	15.16	40.00	235.16	335.59
10	7	1	....	1	8	7	15	3	2	5	35	18	53	1	2	625.28	800.28	....	1,425.56	90.00	....	....	90.00	1,335.56
11	8	....	1	1	20	17	37	10	9	19	53	46	99	1	5	232.58	824.60	40.00	1,097.18	300.00	6.05	....	306.05	791.13
12	10	....	....	....	....	....	....	....	....	....	8	6	14	1	....	....	42.00	....	42.00	....	....	....	....	42.00
13	11	2	4	6	46	45	91	27	30	57	280	229	509	1	6	....	5,351.60	98.00	7,449.60	4,583.50	233.58	848.85	5,660.93	1,788.67
14	11	....	1	1	4	5	9	2	4	6	24	12	36	1	4	181.76	437.49	....	619.25	160.00	....	....	160.00	459.25
15	12	....	1	1	18	6	24	11	5	16	33	38	71	1	3	246.62	671.48	....	918.10	135.00	12.15	....	147.15	770.95
16	12	1	....	1	3	4	7	2	4	6	15	8	23	1	3	58.67	196.11	....	254.78	135.00	....	....	135.00	119.78
17	13	1	....	1	19	8	27	17	16	33	40	44	84	1	7	507.07	1,186.06	84.35	1,777.48	385.00	84.35	....	469.35	1,308.13
18	14	1	....	1	22	29	51	8	12	20	24	32	56	1	9	220.83	693.75	56.00	970.58	450.00	....	....	450.00	520.58
19	14	1	....	1	14	16	30	7	8	15	16	20	36	1	8	109.58	383.88	13.50	506.96	200.00	....	....	200.00	306.96
20	16	....	....	....	....	....	....	....	....	....	8	16	24	1	....	....	92.17	....	92.17	....	....	....	....	92.17
21	17	....	....	....	....	....	....	....	....	....	12	8	20	1	....	....	54.37	....	54.37	....	....	....	....	54.37
22	19	....	....	....	....	....	....	....	....	....	9	5	14	1	....	....	87.25	....	87.25	....	....	....	....	87.25
23	20	....	2	2	47	35	82	29	22	51	58	57	115	1	6	....	1,259.33	81.91	1,341.24	950.00	26.10	111.47	1,087.57	253.67
24	21	1	....	1	8	6	14	5	4	9	19	15	34	1	2	78.28	281.60	....	359.88	100.00	....	....	100.00	259.88
25	23	....	1	1	16	15	31	8	7	15	50	30	80	1	7	252.69	913.32	25.00	1,191.01	420.00	24.45	113.44	557.89	633.12
26	23	1	....	1	9	8	17	3	6	9	32	30	62	1	3½	136.44	569.92	....	706.36	175.00	....	....	175.00	531.36
27	23	....	1	1	14	14	28	6	9	15	31	24	55	1	4	197.03	587.83	....	784.86	180.00	19.90	....	199.90	584.46
28	24	....	1	1	11	17	28	8	9	17	26	32	58	1	5	25.47	661.33	....	686.80	250.00	....	....	250.00	436.80
Total (28).	24	12	26	38	484	414	898	289	271	560	1,658	1,451	3,109	28	118½	4,783.09	34,102.56	688.18	39,578.83	12,918.50	796.69	1,188.76	14,892.95	24,680.88

LINCOLN COUNTY.

tric	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand Oct. 1, 1899.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance July 6, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
1	1	1	1	2	38	46	84	25	31	56	129	128	257	2	8	$357.48	$276.77	$33.33	$667.58	....	$48.16	$6.00	$54.16	$612.82
2	2	1	....	1	No school.						39	44	83	1	....	140.30	120.20	....	242.50	....	....	....	....	....
3	10	1	1	2	No school.						16	11	27	2	....	53.07	21.72	1.31	76.10	....	....	....	....	....
4	4	1	1	2	School in session.						52	46	98	1	....	203.57	73.26	....	276.83	....	....	175.25	175.25	101.58
5	10	1	1	2	No school.						16	19	35	1	....	33.71	28.95	1.71	64.37	....	....	....	....	....
6	6	1	....	1	No school.						29	20	49	1	....	54.18	61.50	....	115.68	$30.00	1.25	....	31.25	84.43
8	8	1	1	2	School in session.						107	107	114	1	....	199.58	161.00	32.00	392.58	....	6.50	....	6.50	386.08
11	11	1	....	1	....	....	....	....	....	....	......	......	......	1	....	....	....	....	....	....	....	....	....	....
12	12	1	....	1	School in session.						42	28	70	1	....	70.74	42.52	....	113.26	....	....	2.50	2.50	110.76
14	5	1	1	2	School in session.						38	28	66	1	....	98.80	51.56	....	150.36	....	....	7 55	7.55	142.81
15	12	1	....	1	School in session.						13	11	24	1	....	50.82	16.32	....	67.15	....	....	....	....	....
16	12	1	1	2	No school.						24	19	43	1	....	53.48	39.80	....	93.28	....	....	....	....	....
18	1	1	....	1	No school.						28	26	54	1	....	102.00	49.65	....	152.51	....	....	....	....	....
20	2	1	1	2	24	18	42	18	15	33	42	42	84	1	2	142.78	66.02	....	208.80	70.20	2.00	....	72.00	136.80
27	8	1	1	2	15	11	26	9	7	16	25	17	42	1	2	48.92	25.33	8.00	82.25	80.00	....	....	80.00	2.25
28	9	....	1	1	School in session.						66	42	108	1	....	12.22	32.57	....	44.79	....	....	....	....	44.79
32	3	....	....	....	No report—no school.						......	......	......	....	....	....	....	....	....	....	....	....	....	....
33	4	....	....	....	No report—no school.						26	26	52	....	....	73.89	52.46	....	126.35	....	....	....	....	126.35
35	10	....	....	....	No report—no school.						14	14	28	....	....	6.01	22.62	1.34	29.98	....	....	....	....	29.98
42	10	....	....	....	No report—no school.						24	20	44	....	....	73.16	38.89	2.31	114.36	....	....	....	....	114.36
43	7	....	....	....	No report—no school.						21	17	38	....	....	11.01	27.13	....	38.14	....	....	....	....	38.14
Total (21)	21	15	10	25	....	....	....	....	....	105	751	565	1,316	19	12	1,785.58	1,190.27	80.00	3,055.85	180.00	58.51	191.30	429.21	2,626.04

District schools in New Mexico—Continued.

MORA COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
1	1	2	1	3	63	46	109	52	31	83	185	155	226	3	6	$41.60	$174.02	$644.00	$859.62	$510.00	$82.00	$592.00	$267.62
2	2	1	....	1	51	39	90	30	24	54	105	94	199	1	3	16.00	153.23	144.00	313.23	120.00	29.10	149.10	222.33
3	3	1	....	1	44	41	85	27	22	49	49	53	102	1	3	21.05	78.54	125.00	224.59	180.00	25.00	205.00	19.59
4	4	1	....	1	18	17	35	14	10	24	28	23	51	1	3	11.17	59.27	27.00	97.44	90.00	7.00	97.00	.44
5	5	1	1	2	54	51	105	39	42	81	81	71	152	2	6	8.15	117.04	191.10	389.29	180.00	45.00	225.00	164.29
6	6	1	....	1	36	54	90	24	39	63	75	62	137	1	3	6.40	105.49	130.00	241.89	90.00	15.00	105.00	136.89
7	7	1	....	1	23	20	43	17	17	34	42	34	76	1	3	2.15	58.52	35.00	95.67	75.00	13.00	88.00	7.67
9	9	1	....	1	44	31	75	27	51	58	39	64	103	1	4	9.27	79.31	46.25	134.83	120.00	14.00	134.00	.83
10	10	1	....	1	29	27	56	20	22	42	37	51	88	1	3	11.50	67.76	125.00	204.26	120.00	15.00	135.00	69.26
11	11	....	1	1	32	37	79	26	26	52	48	57	105	1	6	150.75	80.85	270.00	501.06	300.00	48.00	348.00	153.60
12	12	1	1	2	84	72	156	71	77	148	114	116	228	2	10	175.00	175.56	876.00	1,226.56	800.00	150.00	950.00	276.56
13	13	1	....	1	19	22	41	11	16	27	35	20	55	1	3	....	42.35	20.00	62.35	60.00	....	60.00	2.33
14	14	1	....	1	30	35	65	20	25	45	30	35	65	1	3	4.50	50.05	30.00	84.55	75.00	4.00	79.00	5.55
15	15	1	....	1	27	20	47	20	15	35	27	20	47	1	3	2.40	64.68	32.00	99.08	60.00	10.00	70.00	29.08
16	16	1	....	1	20	25	45	14	19	33	20	25	45	1	3	4.50	57.75	40.00	102.25	75.00	12.00	87.00	15.25
19	19	1	....	1	35	50	85	20	30	50	73	60	133	1	3	7.25	102.41	130.00	239.66	90.00	16.00	106.00	133.66
20	20	1	....	1	30	35	65	20	27	47	61	50	111	1	3	11.00	85.47	35.00	181.47	75.00	10.00	85.00	46.47
23	23	1	....	1	15	25	40	10	20	30	25	31	56	1	3	....	43.12	30.00	73.12	60.00	6.00	66.00	7.12
24	18	1	....	1	40	35	75	30	25	55	50	70	120	1	3	9.40	92.40	20.00	121.40	60.00	10.00	70.00	51.40
25	25	1	....	1	20	15	35	15	10	25	35	36	71	1	3	5.40	54.67	20.00	80.07	60.00	5.00	65.00	15.07
26	....	1	....	1	30	20	50	20	12	32	45	42	87	1	3	6.50	66.99	35.00	108.49	60.00	12.00	72.00	36.49
27	....	1	....	1	28	20	48	18	15	33	38	38	76	1	3	4.20	58.52	25.00	87.72	60.00	6.00	66.00	21.72
29	21	1	....	1	30	50	80	15	25	40	75	55	130	1	3	9.25	100.10	30.00	139.35	75.00	10.00	85.00	54.35
30	24	1	....	1	23	25	48	15	17	32	49	30	79	1	3	12.50	60.83	40.00	113.33	75.00	10.00	85.00	28.33
33	17	1	....	1	28	27	55	16	18	34	44	35	79	1	3	8.25	60.83	25.00	94.08	75.00	6.00	81.00	13.08
39	26	1	....	1	15	18	38	10	14	24	25	34	59	1	3	3.80	45.43	30.00	79.23	60.00	6.00	66.00	13.23
41	....	1	....	1	50	30	80	32	23	55	72	48	120	1	3	4.50	92.40	130.00	226.90	120.00	18.00	138.00	88.90
47	8	1	....	1	40	35	75	30	28	58	54	55	109	1	3	6.80	83.98	150.00	240.78	120.00	20.00	140.00	100.73
22	....	1	....	1	50	30	80	40	25	65	80	52	132	1	3	9.50	101.64	75.00	186.14	150.00	12.00	162.00	24.14
Total (29)....	25	29	4	33	1,008	982	1,990	684	705	1,389	1,651	1,619	3,370	33	109	568.79	2,413.16	3,510.35	6,487.30	3,090.00	614.10	3,704.10	2,783.20

OTERO COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.			
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	44	114	.....	.....	.....	$133.03	$387.11	$520.14
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	59	109	.....	.....	.....	127.20	110.98	238.18
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	20	45	.....	.....	.....	52.51	.....	52.51
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	105	105	210	.....	.....	.....	238.50	.....	238.50
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	47	77	.....	.....	.....	89.85	67.52	157.37
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42.71	42.71
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	35	55	.....	.....	.....	64.18	.....	64.18
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	20	41	.....	.....	.....	47.84	30.10	77.94
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	75	150	.....	.....	.....	175.55	.....	175.55
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22	26	48	.....	.....	.....	56.01	.....	56.01
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23	18	41	.....	.....	.....	47.84	.....	47.84
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	25	55	.....	.....	.....	64.18	.....	64.18
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	32	24	56	.....	.....	.....	65.35	.....	65.35
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	16	32	.....	.....	.....	37.34	.....	37.34
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	17	37	.....	.....	.....	43.17	.....	43.17
Total (15)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	539	531	1,070	.....	.....	.....	1,242.55	638.42	1,880.79

District schools in New Mexico—Continued.

RIO ARRIBA COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Oct. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
1	1	....	....	....	....	....	....	....	....	....	90	60	150	....	....	$47.51	$66.50	$36.36	$150.37	....	....	....	$150.37
2	2	1	....	1	22	5	27	22	5	27	100	55	155	1	3	....	13.69	117.60	131.29	$87.00	$40.00	$127.00	4.29
3	3	1	....	1	....	14	14	....	14	14	50	12	62	1	3	1.20	38.10	....	39.30	25.00	17.00	42.00	....
4	4	1	....	1	27	6	33	20	5	25	131	116	247	1	3	.50	46.65	....	47.15	45.00	7.00	52.00	....
5	5	1	....	1	40	7	47	31	6	37	80	23	103	1	3	.08	53.20	....	53.28	60.00	20.65	80.65	....
6	6	1	....	1	28	16	44	28	16	44	113	113	226	1	3	....	....	....	....	60.00	18.36	78.56	....
7	7	1	....	1	26	13	39	26	13	39	70	30	100	1	3	2.28	46.55	....	48.83	40.00	24.00	46.00	....
8	8	2	....	2	34	29	63	34	29	63	68	73	141	1	4	....	39.47	....	39.47	100.00	48.00	148.00	....
9	9	....	....	....	....	....	....	....	....	....	67	57	124	....	....	64.50	53.50	56.20	174.20	....	....	....	174.20
10	10	2	....	2	46	17	63	38	14	52	88	46	134	1	3	52.88	86.45	....	139.33	180.00	10.00	190.00	....
11	11	1	....	1	28	16	44	19	10	29	100	53	153	1	3	.98	46.55	36.00	83.53	87.99	30.00	117.99	....
12	12	1	....	1	22	13	35	22	13	35	70	24	94	1	3	.77	79.83	....	80.60	85.00	....	85.00	....
13	13	....	....	....	....	....	....	....	....	....	81	21	102	....	....	47.55	33.25	90.86	171.66	....	....	....	171.66
14	14	....	....	....	....	....	....	....	....	....	113	33	156	....	....	69.78	86.55	70.62	186.96	....	....	....	186.96
15	15	....	....	....	....	....	....	....	....	....	101	52	153	....	....	46.52	39.90	96.52	182.94	....	....	....	182.94
16	16	1	....	1	19	4	23	14	4	18	40	50	90	1	3	58.63	39.90	106.40	204.93	35.00	8.00	43.00	161.95
17	17	2	1	3	70	30	100	68	25	93	115	98	213	1	3	76.47	79.80	269.02	425.29	293.00	41.60	334.60	....
18	18	1	1	2	47	37	84	32	30	62	120	90	210	1	4	65.09	73.15	293.84	432.08	340.00	78.98	418.98	....
19	19	....	1	1	30	25	55	30	25	50	90	35	120	1	3	....	17.25	173.34	190.59	131.80	....	137.80	....
20	20	1	....	1	20	15	35	20	13	33	50	35	85	1	3	....	23.25	94.99	118.24	100.00	34.01	134.01	....
21	21	1	....	1	22	18	40	21	18	39	55	25	80	1	3	....	100.00	1.54	101.54	200.00	50.00	250.00	....
22	....	....	....	....	....	....	....	....	....	....	61	35	96	....	....	38.15	33.25	....	71.40	....	....	....	71.40
23	22	1	....	1	19	19	38	19	15	34	50	55	105	1	3	....	....	3.29	3.29	45.39	33.13½	78.52½	....
24	23	1	....	1	11	7	18	11	7	18	55	65	120	1	3	17.58	53.20	48.24	119.02	70.00	27.50	97.50	11.52
25	24	1	....	1	7	15	22	6	14	20	30	40	70	1	3	....	26.60	....	26.60	29.00	8.60	37.60	....
26	25	1	....	1	10	15	25	10	15	25	25	31	66	1	3	....	39.90	.40	40.30	43.00	13.00	56.00	....
27	26	2	....	2	11	22	33	11	22	33	55	52	107	1	3	13.90	33.25	94.55	141.70	210.00	34.00	244.00	....
28	27	2	....	2	46	18	64	40	14	54	50	50	100	1	4	202.77	53.20	169.65	425.62	280.00	18.13	298.13	....
29	28	....	1	1	20	10	30	20	9	29	31	28	59	1	3	29.13	33.25	62.45	124.83	75.00	8.00	83.00	....
30	29	1	....	1	5	10	15	4	10	14	10	15	25	1	3	....	13.30	7.00	20.30	16.00	6.49	22.00	....
31	30	....	....	....	....	....	....	....	....	....	35	45	80	....	....	89.56	26.60	222.88	339.04	....	....	....	339.04
32	31	....	....	....	....	....	....	....	....	....	30	30	60	....	....	30.02	26.60	17.62	74.24	....	....	....	74.24
33	32	....	1	1	26	14	40	20	14	34	55	65	120	1	3	....	66.50	6.48	12.98	44.00	25.50	69.50	3.48
34	33	1	....	1	15	3	18	15	3	18	60	31	91	1	3	....	26.60	4.86	31.46	32.00	18.00	50.00	....
35	34	1	....	1	25	7	32	25	7	32	40	27	67	1	3	16.46	39.90	11.46	67.82	32.00	10.00	42.00	25.82
36	35	1	....	1	10	8	18	7	3	10	50	10	60	1	3	13.00	33.25	12.00	58.25	21.00	13.50	34.50	58.25

37	36	1	....	1	17	5	22	17	5	22	60	30	90	1	3	....	39.90	1.72	41.62	33.00	12.00	45.00	23.75
38	37	....	....	....	......	....	......	....	....	......	55	39	94	....	....	23.73	19.95	18.73	62.41	....	....	....	62.41
39	38	2	....	2	44	20	64	44	20	64	51	75	126	1	3	331.92	66.50	356.17	654.59	140.00	....	140.00	....
40	39	....	....	....	......	....	......	....	....	......	60	43	103	....	....	39.27	26.60	39.27	105.14	....	....	....	105.14
41	40	1	....	1	12	6	18	12	6	18	35	25	60	1	3	....	46.57	46.57	93.14	48.00	18.95	66.95	26.19
42	41	....	....	....	......	....	......	....	....	......	......	......	......	....	....	....	....	....	....	....	....	....	....
43	42	....	....	....	......	....	......	....	....	......	43	31	74	....	....	47.72	13.30	....	61.02	....	....	....	61.02
Total (43)	42	34	5	39	1,048	439	1,488	697	404	1,101	1,150	1,874	3,024	31	97	1,327.96	1,741.46	2,566.36	5,636.05	2,994.18	673.40½	3,667.58½	1,968.46

SAN JUAN COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
2	2	2	....	2	35	19	54	26.6	17	43.6	42	27	69	2	3	$83.48	$268.45	$17.47	$369.40	$272.01	$75.57	$347.58	$21.82
3	3	....	....	....	....	....	....	......	......	......	14	12	26	....	....	8.85	59.77	....	68.62	....	....	....	68.62
4	4	1	....	1	....	....	....	......	......	......	45	33	78	1	3	40.70	179.28	28.90	248.88	75.00	....	75.00	173.88
5	5	....	2	2	49	49	98	30.3	35.5	65.8	63	63	127	2	5	.32	490.17	5.28	495.77	368.05	123.11	491.16	4.61
6	6	1	....	1	5	10	15	......	......	......	21	23	44	1	3	2.16	133.78	5.00	140.94	50.35	9.00	59.35	81.09
7	7	1	....	1	12	2	14	9.2	2	11.3	56	48	104	1	3	3.08	239.05	41.10	313.23	89.00	....	89.00	224.23
8	5	....	1	1	17	21	38	8.5	10.7	19.2	17	21	38	1	4	74.21	178.55	13.61	266.37	263.63	18.20	281.83	15.46
10	10	....	1	1	....	....	....	......	......	......	13	14	27	1	3	....	62.07	7.68	69.75	40.00	14.03	54.03	15.72
11	3	....	1	1	15	10	25	12.7	9.4	22.1	28	30	58	1	3	59.17	194.35	5.00	258.52	135.00	....	135.00	123.52
12	10	1	....	1	14	10	24	7	6.3	13.3	13	14	27	1	4	16.37	62.67	3.84	82.88	78.14	....	78.14	4.74
13	7	....	....	....	....	....	....	......	......	......	....	....	....	....	....	....	....	....	....	....	....	....	....
14	8	....	1	1	24	15	39	18	9	27	44	29	73	1	3	23.85	234.67	....	258.52	193.75	....	193.75	64.77
15	9	1	....	1	14	10	24	14	10	24	32	20	52	1	3	33.39	163.12	24.96	221.47	105.00	35.05	140.35	81.42
16	2	....	1	1	20	16	36	14.5	11.2	25.7	32	20	52	1	5	50.49	138.41	5.00	193.90	139.99	10.75	150.74	43.16
17	7	....	....	....	....	....	....	......	......	......	....	....	....	....	....	2.65	....	....	2.65	....	....	....	2.65
18	3	1	....	1	....	....	....	......	......	......	24	16	40	1	4	13.77	132.04	12.48	....	95.25	....	95.25	63.04
19	1	....	....	....	....	....	....	......	......	......	....	....	....	....	....	33.51	....	....	33.51	....	....	....	33.51
20	4	....	....	....	....	....	....	......	......	......	24	13	37	....	....	36.55	58.06	.86	122.47	....	....	....	122.47
21	4	....	1	1	....	....	....	......	......	......	15	20	35	1	3	10.51	83.94	....	94.45	60.00	5.00	65.00	29.45
22	5	....	....	....	....	....	....	......	......	......	12	8	20	....	....	15.80	45.98	....	61.78	....	....	....	61.78
Total (20)	20	8	8	16	205	162	367	140.9	110.9	251.6	495	412	907	16	49	538.86	2,751.36	171.18	3,461.40	1,955.67	290.71	2,246.88	1,215.02

District schools in New Mexico—Continued.

SAN MIGUEL COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School-houses and grounds.	Total.	
1	5 64	2	1	3	119	73	192	45	42	87	279	241	520	1	8¼	$360.94	$753.50	$448.00	$1,562.44	$998.50	$172.20	....	$1,170.70	$391.74
2	29	6	6	12	318	317	635	224	224	448	587	549	1,084	3	9	....	1,984.28	....	....	....	....	....	....	....
3	33	1	....	1	34	23	57	18	12	30	55	46	101	1	3	52.47	145.45	24.15	222.07	50.00	5.05	....	55.05	167.02
4	26	1	1	2	79	57	136	38	27	65	191	140	331	1	9	914.72	533.45	704.00	2,152.17	885.85	214.04	$198.50	1,298.39	853.78
5	1	....	2	2	72	43	115	59	43	102	120	97	217	1	6	197.76	310.65	96.67	605.08	583.60	....	....	583.60	21.48
6	2	1	1	2	58	54	112	32	27	59	130	108	238	2	5¼	274.74	368.10	64.00	706.84	224.15	38.25	....	262.40	444.44
7	16	....	1	1	18	20	38	8	12	20	44	45	89	1	3	23.34	123.55	9.00	155.89	60.00	9.75	....	69.75	86.14
8	32	1	....	1	31	5	36	20	2	22	68	45	113	1	4	.88	159.35	....	160.23	58.65	....	....	58.65	101.58
9	14	1	....	1	19	6	25	5	6	11	56	48	104	1	3¼	50.05	151.30	64.00	265.35	90.00	20.00	....	110.00	155.35
10	7	....	1	1	32	16	48	15	13	28	57	25	82	1	5	116.52	115.90	121.47	353.89	136.45	29.02	....	165.47	188.42
11	38	1	....	1	40	18	58	23	10	33	47	40	87	1	4	90.67	126.65	....	217.32	90.67	....	....	90.67	126.65
12	13	1	....	1	4	10	14	2	5	7	42	32	74	1	3	96.85	106.30	....	203.15	56.00	4.80	....	60.80	142.35
13	23	1	....	1	53	30	83	30	18	48	80	69	149	1	4	123.41	210.75	80.00	414.16	59.50	....	....	83.00	331.16
14	31	1	....	1	43	9	52	23	2	25	55	34	89	1	5	144.95	136.05	32.00	313.00	96.00	41.65	....	137.65	175.35
15	6	1	....	1	9	7	16	9	7	16	23	30	53	1	3	4.01	65.85	....	70.86	21.51	....	....	21.51	49.35
16	20	1	....	1	16	3	19	12	1	13	31	33	64	1	5	91.15	87.30	....	178.45	36.00	20.75	....	56.15	122.30
17	36	1	....	1	5	11	16	5	11	16	30	21	51	1	3	16.39	71.45	....	78.84	35.50	....	....	35.50	52.34
18	24	1	....	1	25	5	30	15	5	20	70	48	118	1	3	157.07	181.10	32.00	370.17	72.00	32.00	....	104.00	266.17
19	34	....	....	....	....	....	....	....	....	....	12	11	23	....	....	15.12	43.05	....	58.17	....	3.70	....	3.70	54.47
20	10	1	1	2	49	40	89	30	29	59	67	64	131	2	3	36.98	180.95	122.00	339.93	66.50	15.80	....	82.30	257.63
21	8	1	....	1	45	....	45	37	....	37	107	75	182	1	4	93.22	259.90	59.00	412.12	80.00	9.00	....	89.00	323.12
22	37	....	....	....	....	....	....	....	....	....	30	34	64	....	....	35.31	84.80	....	120.11	....	....	....	....	120.11
23	56	....	....	....	....	....	....	....	....	....	16	15	31	....	....	16.45	46.95	....	63.40	16.45	....	....	16.45	46.95
24	40	....	1	1	....	....	....	....	....	....	35	29	64	....	3	67.04	89.30	48.00	204.34	67.00	14.25	....	81.25	123.09
25	9	1	....	1	35	30	65	12	12	24	61	65	126	1	3	87.56	191.30	64.00	342.76	188.00	33.00	....	221.00	121.76
26	15	1	....	1	30	2	32	14	....	14	45	26	71	1	4	43.42	104.95	16.00	164.37	31.00	3.75	....	34.75	129.62
27	4	1	....	1	31	15	46	12	6	18	65	70	135	1	4	40.57	190.75	....	231.32	45.00	17.50	....	62.50	168.52
28	85	....	....	....	....	....	....	....	....	....	34	26	60	1	....	26.48	83.00	16.00	125.48	38.00	....	....	38.00	87.48
29	31	1	....	1	14	....	14	9	....	9	56	7	63	1	3	45.92	88.85	....	134.77	30.00	8.50	....	38.50	96.27
30	43	1	....	1	27	16	43	11	9	20	36	24	60	1	3	31.78	89.00	....	120.78	68.78	....	....	68.78	57.00
31	62	1	....	1	....	....	....	....	....	....	32	27	59	1	3	8.77	76.55	16.00	101.32	67.00	7.50	....	74.50	26.82
32	11	1	....	1	45	27	72	30	12	42	112	108	220	1	4¼	140.41	293.00	32.00	465.41	55.50	23.00	86.00	164.50	300.91
33	4	1	....	1	9	12	21	9	12	21	17	16	33	1	3	26.53	52.35	....	78.88	40.50	5.10	....	45.60	33.28
34	35	....	....	....	....	....	....	....	....	....	31	29	60	....	....	.80	89.00	9.00	99.80	....	8.00	....	8.00	91.80
35	44	1	....	1	27	16	43	27	16	43	35	32	67	1	3	36.25	97.15	....	133.40	50.00	11.25	....	61.25	72.15
36	22	....	1	1	19	9	28	19	9	28	56	40	96	1	5	105.40	130.20	....	235.60	88.50	5.00	....	93.50	142.10

37	6	1	....	1	14	12	26	14	12	26	....	....	....	1	3	7.45	17.50	....	24.95	24.95	....	....	24.95	....
38	28	1	....	1	13	4	17	13	4	17	55	53	108	1	3¼	90.69	140.60	12.00	243.29	97.50	7.40	....	104.90	138.39
39	41	....	....	....	....	....	....	....	....	....	19	8	27	....	....	....	25.65	....	25.65	....	....	....	....	25.65
40	12	1	....	1	36	19	55	36	19	55	65	51	116	1	3	78.08	168.70	32.00	278.78	64.65	18.50	....	83.15	195.63
41	31	1	1	2	21	14	35	21	14	35	43	41	84	1	4	53.95	114.80	....	168.75	29.00	13.25	....	42.25	126.50
43	18	1	....	1	14	8	22	14	8	22	24	14	38	1	5	133.62	74.10	....	207.72	120.25	12.00	....	132.25	75.47
44	44	1	....	1	13	9	22	13	9	22	21	21	42	1	3	34.53	60.90	6.25	101.68	22.50	5.50	....	28.00	73.68
45	25	1	....	1	24	7	31	....	....	....	37	33	70	1	3	74.13	89.50	....	163.63	52.50	9.50	....	62.00	101.63
47	36	....	....	....	....	....	....	....	....	....	29	23	52	1	....	42.20	70.90	....	113.10	35.00	2.50	....	37.50	75.60
48	8	1	....	1	....	....	....	....	....	....	49	38	87	1	3	69.48	114.65	10.00	194.13	77.80	20.25	....	98.05	96.08
49	47	....	....	....	....	....	....	....	....	....	10	13	23	....	....	....	42.97	114.72	157.69	105.00	9.99	....	114.99	42.70
50	39	....	1	1	24	20	44	17	16	33	51	40	91	1	4	62.25	121.45	....	183.70	52.50	....	....	52.50	131.20
54	30	1	....	1	17	8	25	10	8	18	29	26	55	1	4	35.70	81.75	....	117.45	46.50	2.50	....	49.00	68.45
62	55	1	....	1	15	10	25	13	8	21	30	47	77	1	4	117.74	106.65	2.40	226.79	95.00	6.70	....	101.70	125.09
63	15	1	....	1	11	9	20	5	4	9	13	22	35	1	3	11.84	54.25	....	66.09	21.50	3.00	....	24.50	41.59
64	51	1	....	1	20	13	33	9	4	13	31	26	57	1	4	7.28	84.65	....	91.93	44.00	7.75	....	51.75	40.18
65	65	1	....	1	13	3	16	10	....	10	36	22	58	1	3	21.25	100.10	13.00	134.35	46.00	9.30	....	55.30	79.05
66	52	....	....	....	....	....	....	....	....	....	16	20	36	....	....	40.23	24.00	....	64.23	....	9.00	....	9.00	55.23
67	45	....	....	....	....	....	....	....	....	....	28	14	42	....	....	15.98	56.90	....	72.88	....	....	....	....	72.88
68	54	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22.56	24.00	....	46.56	....	....	....	....	....
69	56	1	....	1	18	6	24	....	....	....	35	29	64	1	3	25.85	88.30	....	144.15	53.35	....	....	53.35	60.80
71	61	1	....	1	45	22	67	19	7	26	63	52	115	1	4	53.99	183.75	9.00	246.74	106.00	....	....	106.00	140.74
72	55	1	....	1	15	11	26	11	7	18	25	21	46	1	3	80.87	68.20	....	149.07	75.00	....	....	75.00	74.04
73	57	1	....	1	12	9	21	....	....	....	21	26	47	1	3	49.77	69.65	81.00	200.42	60.00	15.75	....	75.75	124.67
75	58	1	....	1	11	9	20	....	....	....	40	26	66	1	5	79.79	100.20	30.05	210.04	94.00	13.30	....	107.30	102.74
76	23	....	....	....	....	....	....	....	....	....	28	23	51	....	....	58.40	76.45	....	134.85	....	....	....	....	134.85
77	63	....	....	....	....	....	....	....	....	....	48	29	77	....	....	64.48	114.65	....	179.49	....	3.00	....	3.00	176.49
79	24	1	....	1	16	8	24	....	....	....	20	14	34	1	3	14.20	45.30	....	59.50	4.00	....	....	4.00	55.50
80	62	1	....	1	10	7	17	2	7	9	....	....	....	1	3	51.78	18.00	....	69.78	48.75	6.55	....	55.30	14.48
81	30	1	....	1	15	7	22	10	7	17	26	19	45	1	3	11.08	69.25	....	80.33	31.50	10.00	....	41.50	38.83
83[1]	65	....	....	....	....	....	....	....	....	....	32	23	64	....	....	....	60.80	....	60.80	....	3.45	....	3.45	57.35
84	57	1	....	1	8	6	14	5	4	9	....	....	....	1	3	16.10	16.00	....	32.10	32.10	....	....	32.10	....
85	45	1	....	1	23	15	38	11	7	18	57	42	99	1	5	105.75	153.55	3.00	262.30	73.00	5.00	30.70	108.70	153.60
87	55	1	....	1	22	13	35	....	....	....	59	54	193	1	5	108.82	159.85	84.00	352.67	139.40	8.15	....	147.55	205.12
88	51	1	....	1	19	16	35	14	10	24	31	17	48	1	3	.03	72.60	....	72.63	23.00	6.40	....	29.40	43.23
89	57	1	....	1	....	....	....	....	....	....	49	28	77	1	3	8.75	95.65	....	104.40	58.70	12.00	....	70.70	33.70
91	44	1	....	1	10	14	24	7	12	19	21	22	43	1	3	21.59	58.85	1.00	81.44	25.00	4.25	....	29.25	52.19
92	54	....	....	....	....	....	....	....	....	....	47	30	77	....	....	80.47	121.15	....	201.62	....	3.00	....	3.00	198.62
93	34	1	....	1	27	29	56	17	15	32	32	31	63	1	3	43.55	86.35	....	129.90	55.00	3.00	....	58.00	71.90
Total (75)	75	60	18	78	1,814	1,187	3,001	1,064	754	1,818	3,982	3,354	7,336	65	138¼	2,359.47	10,073.50	2,455.71	14,888.68	6,285.01	1,006.75	315.20	7,606.96	7,281.72

[1] New district created May 30, 1899.

District schools in New Mexico—Continued.

SANTA FE COUNTY.

District.	Precinct.	Teachers.			Scholars between the ages of 5 and 21 years.			Average daily attendance.			Enrollment.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Oct. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School-houses and grounds.	Total.	
1	1	1	....	1	66	62	128	18	7	25	34	15	49	1	4	$106.47	$386.80	$3.00	$496.27	$86.00	$33.00	$10.50	$129.50	$366.77
2	2	1	....	1	34	34	68	13	5	18	21	10	31	1	3	60.11	184.15	....	244.26	60.00	27.70	....	87.70	156.56
3	3	1	....	1	159	139	298	34	21	55	46	31	77	1	10	157.73	851.68	....	1,009.41	520.00	28.00	40.00	588.00	421.41
4	4	1	....	1	46	37	83	20	11	31	27	14	41	1	4	77.60	228.60	....	306.20	105.00	22.00	....	127.00	179.20
5	5	1	....	1	43	48	91	11	9	20	15	13	28	1	4	104.95	256.52	39.60	401.07	104.50	20.00	25.00	159.50	241.57
6	6	1	....	1	43	54	97	12	11	23	18	16	34	1	4	98.74	275.87	....	374.61	75.00	37.00	....	112.00	262.61
8	8	2	1	3	152	11	263	64	38	102	72	49	121	3	5	317.73	968.42	....	1,286.15	500.00	28.57	10.00	538.57	747.58
9	9	1	....	1	47	42	89	17	14	31	26	24	50	1	3	92.45	243.61	....	336.06	60.00	27.25	....	87.25	248.81
10	10	....	1	1	18	11	29	6	5	11	9	6	15	1	3	71.84	84.88	....	156.72	90.00	13.00	....	103.00	53.72
11	11	1	....	1	64	59	123	21	16	37	33	28	61	1	5	160.75	416.02	....	576.77	205.45	5.64	....	211.09	365.68
12	12	1	....	1	21	20	41	12	7	19	16	11	27	1	3	47.65	220.06	....	267.71	56.00	13.00	....	69.00	198.71
13	12	1	....	1	21	15	36	13	5	18	15	6	21	1	3	27.99	97.29	13.50	138.78	60.00	7.50	....	67.50	71.28
15	1	1	....	1	91	78	169	29	13	42	49	16	65	1	3	208.42	478.35	....	686.77	88.00	....	....	88.00	598.77
16	1	1	....	1	32	19	51	17	7	24	23	11	34	1	3	53.90	148.47	....	202.37	50.00	7.25	4.00	61.25	141.12
17	20	....	1	1	25	24	49	14	15	29	17	21	38	1	3	110.50	290.53	16.20	417.23	150.00	31.45	....	181.45	235.78
18	15	2	....	2	98	84	182	58	29	87	96	84	180	1	4	95.82	486.25	....	582.07	146.45	41.90	....	188.35	393.72
19	12	1	....	1	33	27	60	16	12	28	12	8	20	1	4	81.87	165.57	....	247.44	82.85	7.25	12.00	102.10	145.34
20	14	1	....	1	65	40	105	30	16	46	39	16	55	1	3	105.65	298.00	....	403.66	91.00	28.19	....	119.19	284.47
21	11	1	....	1	15	15	30	9	5	14	9	7	16	1	3	48.39	89.91	....	138.30	90.00	....	....	90.00	48.30
22	16	3	....	3	144	94	208	61	27	88	80	37	117	3	3	211.92	686.29	....	898.21	255.00	48.60	....	339.60	558.61
23	13	....	1	1	51	20	71	11	7	18	14	10	24	1	4	52.79	178.72	10.80	242.31	107.00	8.00	....	115.00	127.31
25	{4 5}	1	....	1	41	34	75	14	8	22	18	14	32	1	4	64.16	207.31	....	271.47	84.00	22.00	....	106.00	165.47
26	2	1	....	1	22	24	46	15	4	19	18	4	22	1	3	29.87	121.94	....	151.81	86.00	3.00	....	89.00	112.81
27	19	....	2	2	136	134	270	35	34	69	59	75	134	2	5	252.17	1,316.85	368.10	1,937.12	577.50	208.00	....	785.50	1,151.62
28	15	1	....	1	28	21	49	20	7	27	24	9	33	1	3	43.64	133.61	....	177.25	28.00	22.65	....	50.65	126.60
29	9	1	....	1	58	48	106	21	12	33	31	19	50	1	4	59.59	290.93	....	350.52	80.00	38.00	....	118.00	232.52
30	5	1	....	1	26	31	57	14	12	26	18	15	33	1	4	59.88	152.19	11.33	223.40	52.50	10.40	25.75	88.65	134.75
Total (27)....	20	27	6	33	2,198	1,995	4,193	605	357	962	839	569	1,408	32	104	2,801.59	9,259.91	462.53	12,523.93	3,840.25	775.35	137.25	4,752.85	7,771.08

SIERRA COUNTY.

District.	Precincts.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1896.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
1	1	....	1	1	11	6	17	10.3	5.2	15.6	34	32	66	1	5	$231.46	$154.15	$85.98	$471.59	$100.00	$63.58	$163.58	$108.06
2	2	1	2	2	57	28	85	34.5	14.5	49	100	66	166	2	4	41.51	406.70	326.68	774.89	187.50	190.16	377.66	397.23
3	3	1	....	1	31	16	47	16.2	9.3	25.5	44	41	85	1	5	51.36	208.25	128.18	387.79	135.00	44.90	179.90	207.89
4	4	1	....	1	35	22	57	19.5	15.8	35.3	80	65	145	1	6	113.25	355.25	9.90	478.40	318.00	47.75	365.75	112.65
5	5	1	....	1	36	28	64	27.3	20.5	47.8	47	46	93	1	4	85.50	227.85	17.00	330.35	160.00	5.25	165.25	165.15
7	7	1	....	1	8	13	21	6.25	9.4	15.29	81	76	157	1	3	333.19	384.65	51.17	769.01	211.00	31.47	242.47	526.54
8	8	1	....	1	11	10	21	9.5	7.6	17.1	13	12	25	1	3	121.99	61.25	18.00	201.24	70.00	12.55	82.55	118.69
9	9	....	....	1	14	7	21	9.4	6.8	16.2	16	3	19	1	4	81.24	46.55	48.74	176.53	160.00	7.00	167.00	9.53
10	10	....	1	1	7	8	15	2.7	3.2	5.9	17	17	34	1	4	97.92	83.30	50.01	231.23	140.00	10.00	150.00	81.23
11	10	....	....	....	....	....	....	....	....	....	4	5	9	....	....	41.43	20.05	....	61.48	....	....	....	61.48
12	12	....	....	....	....	....	....	....	....	....	40	21	61	....	....	....	100.65	66.66	167.31	....	....	....	167.31
13	1	....	1	1	9	5	14	7.3	4.1	11.4	26	24	50	1	3	26.19	122.50	....	148.69	120.00	....	120.00	28.69
15	15	1	....	1	15	12	27	8.6	6.8	15.4	48	38	86	1	3	165.47	210.70	32.87	409.04	225.00	25.60	250.60	158.44
16	16	....	1	1	18	8	26	10.5	3.4	13.9	31	20	51	1	4	42.07	84.15	117.15	243.37	160.00	46.05	206.05	37.82
17	8	1	....	1	25	20	45	15.4	13.7	29.1	38	28	66	1	4	218.88	161.70	47.60	428.18	160.00	9.35	169.35	258.83
Total (15)	15	8	6	14	277	183	460	233.7	120.4	354.1	619	494	1,113	14	52	1,651.46	2,627.70	999.94	5,279.10	2,146.50	493.61	2,640.11	2,638.99

District schools in New Mexico—Continued.

SOCORRO COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Oct. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School-houses and grounds.	Total.	
1-24	1 24										287	239	526			$464.30	$787.70	$1,653.30	$2,905.30	$995.00		$1,082.89	$2,905.30	$607.41
3	3	1		1	20	26	46	10	14	24	41	52	93	1	6	138.45	172.05	16.00	326.50	183.00	$18.85	20.75	326.50	103.90
4	4	1		1	23	16	39	12	14	26	44	30	74	1	3	19.21	136.90	5.40	161.51	24.00		1.90	161.51	135.61
5	5	1		1	40	35	75	22	30	52	60	59	119	1	7	205.52	221.15	64.67	491.34	280.00	14.00	17.00	491.34	180.34
6	2	1		1	58	42	100	28	25	53	88	81	169	1	7	284.66	332.65	32.00	649.31	255.00	17.50	36.50	649.31	340.31
7	7		1	1	60	42	102	42	24	66	98	69	167	1	9	144.51	328.80	162.26	635.57	344.00	88.55		635.57	203.02
8	8										23	17	40			31.93	40.00		71.93				71.93	71.93
9	9	1		1	42	24	66	25	12	37	53	47	100	1	4	193.83	185.00	59.40	438.23	200.00	39.90		438.23	198.33
10	10		1	1	15	18	33	12	10	22	20	21	41	1	3	167.35	75.85	40.96	284.16	180.00			284.16	104.16
11	11		1	1	52	65	117	38	31	69	66	74	140	1	8	328.08	265.00	134.08	727.06	480.00	28.05	8.25	727.06	210.76
12	12		1	1	43	25	68	33	20	53	50	45	95	1	8	138.58	242.72	226.01	707.31	400.00	154.50		707.31	152.81
13	13	1	1	2	51	41	92	31	33	64	109	89	198	2	6	30.07	312.30	291.99	638.86	320.00		119.19	638.86	207.17
14	14										29	36	65			61.18	120.25	197.71	379.09		2.00		379.09	377.09
15	15	1		1	41	20	61	26	13	39	70	65	135	1	4	209.66	261.75	50.00	521.41	200.00		29.00	521.41	292.41
16	16	2		2	60	58	118	48	41	89	89	68	157	2	7	259.13	261.45	81.30	501.92	280.00		18.13	501.92	203.62
17	44	1		1	46	32	78	32	18	50	52	41	93	1	3	121.31	149.05	37.08	307.44	105.00	44.25		307.44	158.19
18	34	1		1	20	18	38	15	13	28	27	25	52	1	3	31.75	96.20	113.34	241.29	130.00			241.29	111.29
19	43	1		1	36	16	52	19	8	27	40	37	77	1	4	137.58	160.45	32.00	329.98	140.00		51.25	339.98	138.73
20	3	1		1	20	14	34	12	10	22	25	24	49	1	4	64.54	91.65		156.19	91.00			156.19	65.19
21	21	1		1	26	19	45	17	11	28	52	47	99	1	4	158.22	178.15	31.00	387.37	140.00	4.00	36.80	327.37	206.57
22	22										25	20	45			16.10	38.25		54.35		54.35		54.35	
23	23										24	24	48			39.45	48.00	22.00	109.45				109.45	109.45
24	14										30	35	65				55.25	24.00	59.25				79.25	79.25
25	25		1	1	32	32	64	34	33	67	60	41	101	1	4	119.07	194.85	36.00	349.92	140.00	215.02		349.92	164.90
26	26										25	34	59			138.15	59.00		197.15		34.00		197.15	163.15
27	7		1	1	42	37	79	25	18	43	50	57	107	1	4	108.46	199.95	90.40	420.81	200.00	10.00	15.55	420.81	197.26
28	28		1	1	60	29	89	15	8	23	79	54	133	1	7	258.08	255.05	32.00	545.13	350.50		17.80	545.13	177.33
30	30	1		1	26	28	54	18	15	33	36	32	68	1	3	116.67	125.80		236.47	90.00	5.00	24.77	236.47	116.70
31	31	1		1	17	15	32	15	12	27	32	31	63	1	6	106.54	116.55		223.09	135.00	1.25	24.30	223.09	62.54
32	32										42	22	64			248.95		62.14	311.09				311.09	311.09
35	30	1		1	18	16	34	23	23	46	47	31	78	1	4	81.16	146.30	10.00	237.46	78.00	33.80		237.46	125.66
36	36	1		1	24	22	46	18	15	33	34	30	64	1	3	53.95	118.14	12.00	184.35	105.00	5.00		184.35	54.35
37	37	1	1	2	42	36	78	38	24	62	51	44	95	2	7	263.06	248.93		511.99	335.00	65.25		511.99	111.74
39	39	1		1	18	20	38	12	15	27	24	26	50	1	4	70.28	92.50	18.00	180.78	92.00		14.00	180.78	74.78
40	40	1		1	20	18	38	15	12	27	23	26	49	1	4	87.57	89.65	28.30	205.52	100.00	8.65		205.52	96.87
42	10		1	1	9	10	19	8	7	15	18	19	37	1	5	161.37	71.45	58.08	290.90	250.00		19.50	290.90	21.40

43	17	....	....	....	......	....	......	....	....	......	51	41	92	....	....	.44	93.00	27.55	120.99	....	6.00	62.35	120.99	52.64
44	4	1	....	1	16	20	36	12	13	25	20	31	51	1	4	98.62	94.35	....	192.97	80.00	....	9.25	192.97	103.72
45	35	....	1	1	28	17	45	18	12	30	38	26	64	1	6	269.80	118.40	89.82	478.02	335.00	41.30	....	478.02	101.72
46	36	....	....	....	......	....	......	....	....	......	12	15	27	....	....	17.72	....	....	17.72	....	....	....	17.72	17.72
47	35	....	1	1	36	38	74	24	24	48	71	49	120	1	7	231.73	307.04	230.63	769.40	445.00	....	23.85	769.40	261.55
48	{31 32}	....	1	1	8	5	13	6	3	9	10	7	17	1	4	45.51	61.45	7.00	113.96	100.00	....	....	113.96	13.96
49	11	....	1	1	16	18	34	14	14	28	34	27	61	1	4	95.12	112.85	40.97	248.94	168.83	....	....	248.94	80.11
Total (43).	43	22	14	36	1,065	372	1,937	717	575	1,292	2,159	1,888	4,047	36	166	5,906.13	6,280.72	4,754.13	16,940.98	7,780.13	720.20	1,854.03	10,354.86	6,586.62

District schools in New Mexico—Continued.

TAOS COUNTY.

District.	Precinct.	Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.			On hand.
		Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	Total.	
1	1	119	123	242	2	5	$431.85	$1,002.89	$35.30	$1,469.94	$684.90	$311.00	$995.90	$474.04
2	2	84	122	206				109.18		109.18				109.18
3	3	185	191	376	1	3	155.35	327.27		484.62	145.95		145.95	338.67
4	4	46	65	111			1.47	58.83		60.30				60.30
5	5	94	84	178	1	5	274.85	207.01	12.60	494.46	152.10		152.10	342.36
6	6	65	66	131	1	3	169.08	69.43		238.51	28.25		28.25	210.26
7	7	69	71	140	2	3	497.16	203.55	5.00	705.71	430.26		430.26	274.45
8	8	80	60	140			.03	74.26		74.29				74.29
9	9	49	47	96			.05	66.88		66.93				66.93
10	10	45	43	88	1	3	73.26	176.90		250.16	102.00		102.00	148.16
11	11	72	62	134			61.23	71.02		132.25				132.25
12	12	44	40	84	1	3	65.18	102.94		168.12	91.25		91.25	76.87
13	13	15	9	24	1	2	35.51	142.05		177.56	7.00		7.00	170.56
14	14	48	32	80			16.32	37.10		53.42				53.42
15	15	9	16	25			2.64	155.26		157.92	66.66		66.66	91.36
16	16	85	77	162			4.95	85.86		90.81				90.81
17	17	40	41	81				42.93		42.93				42.93
18	18	51	50	101				53.53		53.53				53.53
19	19	20	21	41				22.26		22.26				22.26
20	20	24	26	50				26.50		26.50				26.50
21	21													
22	22	50	52	102				54.18		54.18				54.18
23	23	67	53	120			4.37	63.60		67.97				67.97
24	24	27	28	55			13.87	44.01		57.82				57.82
25	25	20	17	37	1	3	184.87	83.60		268.47	217.25		217.25	51.22
26	26	5	3	8			50.64	4.24		54.88				54.88
27	27	66	52	118	1	4	187.58	141.52		329.10	266.55		266.55	62.55
29		35	28	63				33.59		33.59				33.59
30		10	9	19	1	3	154.16	90.06		244.22	154.16		154.16	90.06
31		68	72	140	1	3	97.27	118.83		218.10	128.00		128.00	85.10
33		28	28	56	1	3	120.76	96.62		217.38	26.00		26.00	193.38
34		56	56	112	1	3	257.25	96.02	54.56	412.83	85.00		85.00	327.83
Total (32)	27	1,676	1,644	3,320	16	46	2,859.70	3,856.92	107.46	6,824.08	2,585.33	311.00	2,896.33	3,927.75

UNION COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Expenditures.				On hand
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
1	1	1	2	3	77	55	132	62	38	100	174	130	304	1	6	$240.00	$3,451.83	$582.00	$4,223.83	$1,200 00	$402.52	$1,020.00	$2,623.52	$1,601.31
2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7.85	....	80.58	88.43	....	....	....	....	88.43
3	3	1	2	3	100	85	185	64	103	167	95	91	186	1	7	6.30	3,275.27	50.00	3,331.57	1,435.00	100.00	1,360.40	2,895.40	436.17
4	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	28.00	....	74.37	102.37	....	....	....	....	102.37
5	5	....	....	....	....	....	....	....	....	....	39	23	62	....	....	28.00	....	30.00	58.00	....	....	....	....	58.00
6	6	1	....	1	11	2	13	11	2	13	34	21	55	1	2	40.80	....	35.00	75.80	75.00	....	....	75.00	.80
7	7	1	....	1	29	18	47	29	18	47	50	28	78	1	3	72.00	353.50	46.26	371.76	95.50	20.00	....	115.50	256.26
8	8	1	....	1	17	16	33	13	12	25	62	63	125	1	3	143.24	442.00	45.00	630.24	96.25	12.25	....	108.50	521.74
9	16	1	....	1	27	5	32	18	3	21	38	29	67	1	5	182.94	217.75	49.10	449.79	175.00	31.00	....	206.00	243.79
10	10	....	....	....	....	....	....	....	....	....	34	32	66	....	....	35.44	....	16.00	51.40	....	....	....	....	51.44
11	11	1	....	1	8	9	17	6	6	12	31	32	63	1	2	56.50	343.01	23.50	423.01	70.00	10.00	....	80.00	343.01
12	12	1	....	1	8	15	23	18	15	33	54	44	98	1	3	143.66	418.50	96.00	658.16	120.00	15.00	....	135.00	523.16
13	13	1	....	1	....	....	....	....	....	....	28	28	56	1	3	35.00	40.00	10.00	85.00	75.00	10.00	....	85.00	....
14	14	1	....	1	14	11	25	7	11	18	27	30	57	1	3	45.60	185.25	48.00	278.85	78.00	32.00	....	110.00	168.85
15	15	....	1	1	16	11	27	12	6	18	51	45	96	1	3	106.00	267.48	10.00	383.48	105.00	11.00	....	116.00	267.48
16	9	1	....	1	12	9	21	12	5	17	15	13	28	1	3	50.00	213.27	20.00	283.27	75.00	15.00	....	90.00	193.27
17	15	1	....	1	13	7	20	12	6	18	39	33	72	1	3	101.70	234.00	105.00	440.70	90.00	15.00	....	105.00	335.70
18	2	1	....	1	12	19	31	18	15	33	34	21	55	1	5	43.20	188.50	....	231.70	200.00	28.82	....	228.82	2.88
Total (18)	18	13	5	18	344	262	606	282	240	522	805	663	1,468	14	51	1,366.23	9,530.36	1,270.81	12,167.40	3,889.75	702.59	2,380.40	6,972.74	5,194.66

District schools in New Mexico—Continued.

VALENCIA COUNTY.

District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.			Schools.	Months taught.	Receipts.				Total expenditures.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.			Balance Dec. 1, 1898.	From county school fund.	Poll tax, fines, etc.	Total.	
1	1	......	1	1	35	20	55	35	20	55	35	20	55	1	8	$133.76	$115.76	$18.00	$267.52	$269.52
2	2	1	1	2	63	35	98	63	35	98	63	35	98	2	8	157.21	112.21	45.00	314.41	314.41
5	5	1	......	1	18	14	32	14	11	25	18	14	32	1	4	....	24.30	79.26	103.56	103.56
12	12	1	......	1	36	16	52	36	16	52	36	16	52	1	8	....	57.61	....	57.61	57.61
15	15	1	......	1	55	......	55	55	......	55	55	......	55	1	8	....	63.00	....	63.00	63.00
17	17	1	......	1	36	31	67	28	28	56	36	31	67	1	8	227.00	165.30	21.20	413.00	413.00
21	21	1	......	1	25	11	36	25	9	34	25	11	36	1	8	45.00	70.00	....	115.00	115.00
25	25	......	1	1	16	12	28	16	12	28	16	12	28	1	8	40.13	43.00	....	83.13	83.13
27	27	1	......	1	28	13	41	28	13	41	28	13	41	1	8	78.00	93.00	....	171.00	171.00
28	28	1	......	1	15	17	32	14	13	27	15	17	32	1	8	25.00	25.00	....	50.00	50.00
29	29	1	......	1	29	26	55	29	26	55	29	26	51	1	8	25.00	95.13	....	120.13	120.13
30	30	1	......	1	13	11	24	13	11	24	13	11	24	1	8	36.00	28.16	....	64.16	64.16
32	32	1	......	1	14	......	14	14	......	14	14	......	14	1	8	....	20.00	....	20.00	20.00
33	33	1	......	1	25	14	39	25	14	39	25	14	39	1	8	25.00	67.10	....	92.10	92.10
Total	......	12	3	16	432	244	676	419	232	651	432	244	676	16	61	791.10	979.57	163.46	1,984.13	1,984.13

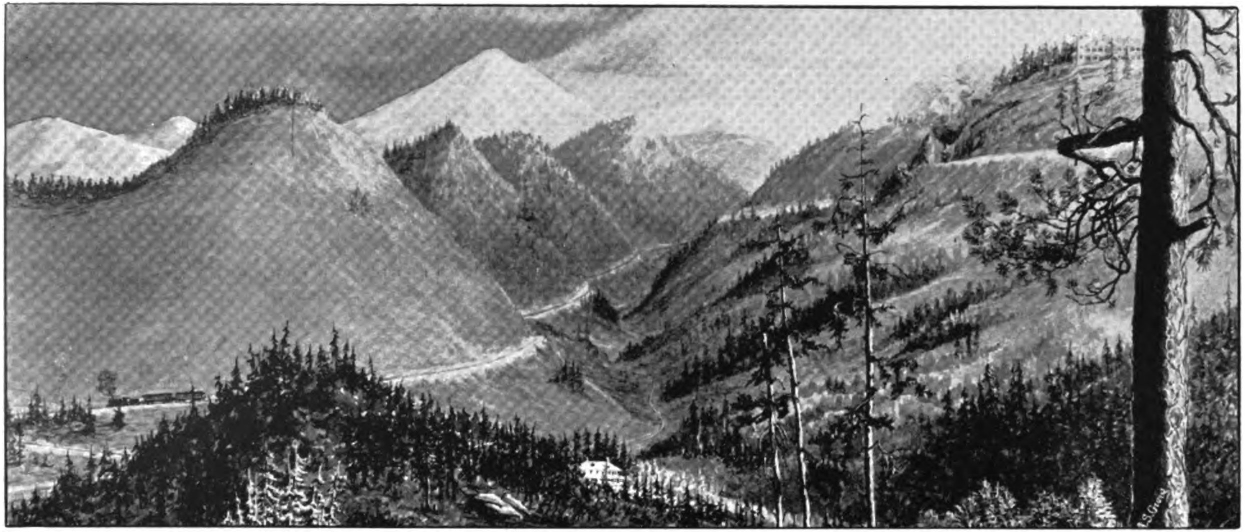
RECAPITULATION OF DISTRICT SCHOOLS.

County.	District.	Precinct.	Teachers.			Enrollment.			Average daily attendance.			Scholars between the ages of 5 and 21 years.		
			Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Bernalillo	49	50	50	38	88	2,229	1,935	4,164	1,599	1,370	2,969	3,889	3,715	7,604
Chaves	16		3	12	15	249	311	561	290	234	524	484	487	971
Colfax	26	26	17	25	42	728	741	1,469	514	890	1,404	1,226	1,582	2,808
Dona Ana	28	30	7	22	29	698	483	1,181	439	309	748	2,125	1,818	3,943
Eddy	16	4	9	9	18	294	247	541	177	140	317	536	403	939
Grant	28	24	12	26	38	484	414	898	289	271	560	1,658	1,451	3,109
Guadalupe	19	15	12	2	14	405	186	591	325	142	467	518	720	1,538
Lincoln	21	21	21	10	31							751	565	1,316
Mora	29	25	29	4	33	1,008	982	1,990	684	705	1,389	1,651	1,619	3,270
Otero	15	25										589	581	1,070
Rio Arriba	43	42	34	5	39	1,048	439	1,487	697	404	1,101	1,150	1,879	3,024
San Miguel	75	42	60	18	78	1,814	1,187	3,001	1,064	754	1,818	3,982	3,354	7,336
San Juan	22	21	8	8	16	205	162	367	140	110	251	495	412	907
Santa Fe	27	25	27	6	33	839	569	1,408	605	357	962	2,198	1,995	4,193
Sierra	15	15	8	6	14	277	183	460	230	120	350	619	494	1,113
Socorro	43	43	22	14	36	1,065	872	1,937	217	575	1,292	2,159	1,888	4,047
Taos	32	27	14	3	17	228	197	425	242	100	342	1,676	1,644	3,320
Union	18	18	13	5	18	344	262	606	282	240	522	805	663	1,468
Valencia	31	31	12	14	16	432	244	676	419	232	651	432	244	676
Total	553	484	358	217	575	12,347	9,414	21,761	9,339	7,294	16,533	27,149	25,503	52,652

District schools in New Mexico—Continued.

RECAPITULATION OF DISTRICT SCHOOLS—Continued.

County.	Schools.	Months taught.	Receipts.				Expenditures.				On hand.
			Balance.	From county school fund.	Poll tax, fines, etc.	Total.	Teachers' wages.	Rent, fuel, etc.	School houses and grounds.	Total.	
Bernalillo	74	667	$13,174.82	$46,508.86	$6,446.81	$66,130.49	$33,736.30	$12,455.35	$1,345.95	$47,537.60	$18,592.89
Chaves	17	55	3,031.74	6,505.30	....	9,537.04	....	....	3,663.48	3,663.48	5,873.56
Colfax	30	122	8,998.36	5,702.80	4,149.25	18,850.41	5,715.94	1,745.26	....	7,461.20	11,389.21
Dona Ana	25	95	4,204.83	4,754.90	2,263.38	11,223.11	6,128.13	843.27	808.00	7,779.40	3,443.71
Eddy	18	93	1,422.15	5,725.80	5,830.40	12,978.35	4,122.00	466.46	1,195.34	5,783.80	7,194.55
Grant	28	113½	4,783.09	34,102.56	688.18	39,573.83	12,913.50	765.69	1,183.76	14,862.95	24,710.88
Guadalupe	14	41	845.07	889.02	....	1,734.09	1,415.50	....	....	1,415.50	318.59
Lincoln	19	12	1,785.58	1,190.27	80.00	3,055.85	180.00	58.57	191.30	429.87	2,625.98
Mora	33	109	563.79	2,413.16	3,510.35	6,487.30	3,090.00	614.00	....	3,704.00	2,783.30
Otero	15	....	....	1,242.55	638.42	1,880.97	....	....	....	....	1,880.97
Rio Arriba	31	97	1,827.96	1,741.46	2,566.63	5,636.05	2,994.18	673.40	....	3,667.58	1,968.47
San Miguel	65	138	2,359.47	10,073.50	2,455.71	14,888.68	6,285.01	1,006.75	815.20	7,606.96	7,281.72
San Juan	16	149	538.86	2,751.36	171.18	3,461.40	1,955.67	290.71	....	2,246.38	1,215.02
Santa Fe	32	154	2,801.59	9,259.91	462.58	12,524.08	3,840.25	775.35	137.25	4,752.85	7,771.18
Sierra	14	52	1,651.46	2,627.70	999.94	5,279.10	2,146.50	533.61	....	2,680.11	2,598.99
Socorro	36	116	5,906.13	6,280.72	4,754.13	16,940.98	7,780.13	720.20	1,854.03	10,354.36	6,586.62
Taos	16	46	2,859.70	3,856.92	107.46	6,824.08	2,585.33	311.00	....	2,896.33	3,927.75
Union	14	51	1,366.23	9,530.36	1,270.81	12,167.40	3,389.75	702.59	2,880.40	6,972.74	5,194.66
Valencia	16	61	791.10	979.57	163.46	1,934.13	1,934.13	....	....	1,934.13	....
Total	513	2,070	58,411.93	156,136.72	36,558.64	251,107.29	100,712.32	21,962.21	13,074.71	135,749.24	115,358.05



Scene on El Paso and Northeastern Railroad, Otero County, N. Mex.

THE UNIVERSITY OF NEW MEXICO.

SIR: I have the honor to transmit herewith my annual report of the condition of the University of New Mexico for the school year closing with the commencement exercises of June 7, 1900.

The year has been in many ways the most successful in the history of the institution; but it brings us to the "parting of the ways," so that the time immediately before us shall be forever memorable in the history of the university, either as the beginning of a new era of prosperity or a time of blasted hopes.

The University of New Mexico was incorporated by an act of the Territorial legislature of 1889, and the location fixed at Albuquerque. The regents secured the necessary amount of land required by the enacting law and began the erection of a suitable building as soon as their funds would permit. In May, 1892, the building was completed and accepted by the board of regents. On June 15, 1892, the normal department of the university was opened; on September 21, 1892, the preparatory department was opened, and in November, 1893, the commercial department was added.

The university has been in successful operation for eight years, having conferred during this time thirty diplomas of graduation and many certificates of satisfactory work in more limited courses of study. The standard of work has steadily risen, and the facilities for the study of the liberal arts and sciences are being continually increased to meet the growing demands of the community. Material development has kept pace with internal growth, and the university, with its commodious buildings and growing apparatus and library, can now offer better facilities for study and scientific research than ever before, embracing a wide variety of subjects taught by specialists in every branch.

There have been enrolled during the past year in the academic work 105 students, in the music school 52, and in the university extension class 22 students. Numerically, the increase, although encouraging, is offset by the fact that about 25 students who desired to enter the university were prevented from so doing by the great expense of board and the lack of dormitory privileges. The faculty are unanimous that it is useless to invite students throughout the Territory to enter the university until this difficulty is met. Only such students as live in Albuquerque and a few with independent means can hope to meet the expense of living now entailed. It is apparently too early to expect that generous appreciation of the value of education to the community that will awaken cooperation in such a matter on the part of the resident public.

The internal administration has been disturbed by no infraction of discipline, and a conspicuous improvement in the smoothness with which administrative business has moved is to be ascribed to more perfect organization and division of labor.

The greater maturity of our students has evidenced itself not only in a higher and more thorough kind of class work, but also in the success of the student organizations, the literary societies, oratorical and athletic associations, and the college paper which collectively constitute so good an index of college life, give evidence of the superiority of the year just closed.

Sharper lines of demarcation have been drawn between the several schools of the university, and the commercial school has been made to rank with the others in time and intensity of the work, and it is hoped that an increasing number will thus be led to combine with the technical work of this department the broader studies of an academic course.

The normal school has approved itself by the character of work done by its graduates, and enjoys the great advantage over most similar schools that it commands the assistance of the entire college faculty as well as the stimulus and broadening influence of higher work.

A very gratifying appreciation of the work of the university from outside the borders of the Territory has manifested itself, and may be attributed in part to the influence of the numerous publications emanating from the university.

The second volume of the bulletin of the university will consist of two parts, each a large volume. The first is now ready, and is largely composed of work done by the geological survey, being chiefly devoted to the discussion of certain economic problems. The volume is illustrated by 2 lithographic maps and 30 plates. Incidentally, this volume illustrates not only the facilities of the university for giving instruction in practical geology and mining, but also the work actually done by the students. The first paper of 75 pages is devoted to the detailed geology of the geology sheet of the proposed map of the Territory. It embodies the work of four of the advanced students as well as of the head of the geological department, and discusses the clay and other economic products of the sheet. This paper is illustrated by 32 plates and 2 lithographic maps. The second part of the report is devoted to the salt and gypsum lands of the Territory, and supplies an exhaustive account of these lands recently given to the university by act of Congress. In this work three of the students of the university have actively assisted. This part is fully illustrated with colored maps and plates. A brief paper by another student identifies a very interesting geological horizon in the Sandia range of New Mexico, hitherto found only in Ohio.

The last illustrated paper is by Mr. V. V. Clark, who describes the application of the cyanide process to New Mexico ores. The chemical work on which this paper was based was in part done at the university. A large amount of work prepared for this volume was crowded out, and will appear in Eastern journals. The publication of this volume has cost the Territory and the university nothing, as the fund was supplied for a large part by Mrs. Hadley. The second part is in preparation, and will be devoted to the results of the work of the Hadley Laboratory. Researches of paramount interest in the control of disease by climatic agencies are being carried on, although the work of the laboratory will soon come to an abrupt standstill unless money for equipment is supplied.

The papers under way for the second part include a general account of the present status of the treatment of lung diseases by climatic influence, a paper on the bacterial flora of the air and water of the Territory, together with a discussion of the dangerous species and conclusions as to the bacterial conditions upon the plateau, a paper based on the statistics of the late Dr. Maltby on the effect of the altitude on the vital capacity of school children and others living on the plateau, a paper on the effect of altitude on the blood and the physiological results, as well as a variety of other papers on the other side of the great subject.

The building for the work of this laboratory has been completed, and in appearance and internal arrangement is all that could be desired.

From an architectural point of view the building may be described as follows: A basement of light-colored sandstone rises 5 feet above the ground, and is surmounted by fine brick walls 27 feet high. The brick are laid in colored mortar, with a tooled joint. All the sills and lintels are of the same fine, gray sandstone as the basement. The façade is accentuated by the central projection of 7 feet, in which is placed the main entrance. This entrance is approached by a broad flight of stone steps, and is flanked on each side by a pilaster 30 feet high supporting the roof of this central bay. While the fenestration is strictly symmetrical as regards the axis of development, yet the grouping is such as to give variety and sparkle to the design, and by the use of piers with imposts and bases an additional effect is obtained. Several dormers intersect the main roof, which has a deck surrounded by iron casting. All the outlines of the roof sweep down to the projecting cornice with very graceful curves.

The interior of the building has been planned from the standpoint of utility and convenience, being especially well adapted to the purposes it is intended to serve. Still the corridors, staircase, halls, and private studies present a very pleasing appearance. The woodwork consists of Missouri pine, natural finish, which gives brightness to the already well-lighted rooms.

The building is heated by hot water, and the plumbing and ventilating systems are of the most modern and approved sanitary design. All the laboratories are provided with gas from the university plant and with water from the city system.

On the first floor are to be found the laboratories of histology, zoology and botany, and geology; also the herbarium, a large lecture room, and a private study for the use of the department of geology. The laboratories of physics, chemistry, and bacteriology occupy the second floor. A large stock room opens from the general chemistry room, and the hood room separates the latter from the quantitative laboratory. Between the physics and quantitative laboratories is located the balance room directly accessible from both. A constant temperature vault is located in the basement, and a large deck is provided for the use of the Weather Bureau and special meterological investigations.

The following passage from the catalogue will serve to indicate the work so far outlined:

"THE HADLEY CLIMATOLOGICAL LABORATORY.

"This department of the work of the university is an organization for research especially with reference to the influence of the climate of the arid and plateau region of the United States upon disease. A very broad view is taken of the scope of this investigation and nothing will be neglected which may be expected to bear in any way upon the great problem for which this organization exists.

"*Organization*—Director, C. L. Herrick, Ph. D., biology, climatology, and geognosy; vice-director, John Weinzirl, M. S., bacteriology and physiological chemistry; Edward P. Childs, B. S., director of the physical laboratory, physics and meteorology; George E. Coghill, A. B., M. S., neurology and histology; J. F. Rutherford, M. D., hæmatology; ———, physical examiner; M. Custers, observer, Weather Bureau.

"*Advisory medical board.*—Charles Denison, M. D., Denver; G. S. Easterday, M. D., Albuquerque; A. M. Holmes, M. D., Denver; J. A. Henry, M. D., Albuquerque; J. H. Sloan, M. D., Santa Fe; S. D. Swope, M. D., Deming; John Tascher, M. D., Albuquerque; W. R. Tipton, M. D., Las Vegas; J. H. Wroth, M. D., Albuquerque.

"*Work of the laboratory.*—It is not possible to outline in advance the full scope of the work of this department, but a few of the lines of work already begun or contemplated may be indicated.

"Bacteriology: Considerable work has been accomplished in this field and a number of important problems have been opened. A study of the air flora shows that it differs materially from that of other sections of our country, and also that the number of organisms is relatively very small. The sanitary effect of the winds in sweeping the towns and thickly populated communities is a very interesting problem now under investigation. The bactericidal effect of intense sunlight is very great as is shown by data at hand. The desiccating effect of the dry atmosphere on germ life is most pronounced. These several factors furnish a material basis for the remarkable freedom from disease, and the general healthfulness of the climate. The study of several diseases is in progress, special emphasis being placed upon tuberculosis. Experiments on laboratory animals show that tuberculosis is not readily communicated by inoculation, while the tendency to recover from such inoculation is remarkable. Many of the physicians of the Territory avail themselves of the facilities of the laboratory for making sputum and other bacteriological examinations.

"Vital statistics: Physical examinations have been made at intervals of the students of the university and others of the schools of the Territory, and important data have been accumulated. It is intended to extend this work materially, as the very promising results tend to show that climate and altitude have a remarkable effect upon the physicial development of the child, especially as shown in increased lung capacity.

"Pathology: With the assistance of the physicians of the Territory, it is hoped to collate a mass of statistics bearing directly upon the question of the effect of this climate upon disease.

"Physiography: That the climate is greatly influenced by physiographic conditions, such as soil, topography, geological conditions, etc., is patent at first thought. In connection with the university geological survey there has been carried on systematic work in the study of the facts referred to in their bearings on climate and disease. This work will include a report on the hydrography of the Territory.

"Physics: The electrical and photometric conditions of the plateau are of great importance in the appreciation of the effects of climate, and an effort will be made to determine the physical and physiological effects of sunlight, electrical phenomena, winds, etc.

"Meteorology: The principal work accomplished in this line has been the determination of atmospheric and soil moisture. Evaporation tests are also in progress. It is the intention to establish a complete weather bureau in the near future, thus giving us a vast amount of desirable information regarding our climatic conditions.

"Chemistry: The chemical examination of the soils, air, and physiological media goes hand in hand with the work outlined in other lines. Examinations are also made for the physicians of the Territory.

"Hæmatology: Research in this field appears very promising. Some data have been collected, especially in the way of blood counts of persons coming to our altitude. A remarkable increase in the number of blood corpuscles is shown soon after their arrival. The importance of this factor appears to be considerable. It is expected to study the blood from other points of view, more especially from the chemical aspect.

"Experimental physiology: Experimental control of the results by the various methods outlined above will be necessary from time to time. The cooperation of all those interested in this work is earnestly solicited."

A very interesting result of the physical measurements already taken is the discovery of the fact that young persons who have spent the formative years of their lives in New Mexico upon the plateau seem, with hardly an exception, to have developed a greater lung capacity than is usual in students of the same age in Eastern institutions, so that, from the standpoint of physical development, it is highly desirable that children, especially if any tendency to deficiency in this direction is suspected, should have the opportunity to pass the years from 10 to 20 in this region, and it is a matter of congratulation that there is now an opportunity to accomplish this result with no sacrifice of educational facilities.

The list of the faculty appended will indicate a fact very gratifying to the friends of education in the West, namely, that the professors, almost without exception, are persons with the highest training and with experience in university work in older institutions. In this connection, however, it must be admitted that, while advantage has been taken of temporary conditions to secure this desirable personnel of the faculty at an almost nominal expense, such conditions can not be continued. Demands from older schools are depriving us of our most useful members, and the result can only be that as soon as the well-approved workmen in the institution reach a point where they are most useful to us they are called to fields offering promise of support.

The years past have sufficiently proven that it is possible here to achieve success and to attain results equal to those in the older institutions, and we are now face to face with the question whether the Territory desires to enter into and possess the field thrown open to it, or whether the work in the field of higher education shall be permanently crippled. In order to succeed in any worthy way there must now be sufficient funds secured, not for a single term, but for a series of years, to supply adequate salaries to the small corps of instructors which experience shows to be necessary. The requirements for additional apparatus are not less imperative. The great work confidently expected of the Hadley laboratory organization can not be undertaken without a moderate equipment. It is hoped that the self-denying generosity of our citizens may not be thwarted for lack of the necessary apparatus and equipment for this work, in which we have the promise of cooperation from eastern organizations without cost to the Territory.

There is demand for the addition of a department of electrical engineering, and the buildings at present in existence would be sufficient to house the plant for years to come if a relatively small amount could be secured for the equipment. At the present time the economic applications of electricity, more than of almost any other single physical force, bid fair to revolutionize the industries on which our Territory depends for its immediate development. An immediate and pressing need is for cases and shelving to receive the collections of the geological survey.

Departmental statements were made in my last report to the superintendent of instruction, and can be reproduced, if desired, from that source. It is sufficient to state that each of the several departments and schools is enjoying as high a degree of efficiency as the present conditions permit, and all that now seems necessary, in order that the institution should speedily realize the most sanguine hopes of the friends of higher education, is an adequate financial support.

A list of the faculty of the university for the past year is appended from the current catalogue, which, with the above, is

Respectfully submitted,

C. L. Herrick.

Hon. M. A. Otero,
Governor of New Mexico.

FACULTY FOR 1900-1901.

Clarence L. Herrick, Ph. D., president, professor of psychology and philosophy and professor of biology; B. S., University of Minnesota, 1880; University of Leipzig, 1882–83; Geological Survey of Minnesota, 1883–1885; professor of geology and natural history in Denison University, 1885–1889; professor of biology in University of Cincinnati, 1889–1892; University of Berlin, 1892–93; professor of biology in University of Chicago, 1893; professor of biology in Denison University, 1894–1897.

Josephine S. Parsons, principal of the commercial department and instructor in mathematics; High School, Louisville, Ky.; teacher in same; with Gross, Blackwell & Co.; principal of commercial department University of New Mexico, 1893.

James Hay Paxton, A. M., professor of Latin and Greek, and in charge of French; B. A., University of Virginia, 1892; M. A., University of Virginia, 1894; instructor in ancient languages, University of Virginia, 1892–1896; University of New Mexico, 1896.

Charles E. Hodgin, B. Pd., principal of normal department and professor of pedagogy; graduate of Indiana State Normal, 1881; studied at Cook County Normal, Chicago, summer, 1893; and at Chatauqua, Long Beach, Cal., 1896; principal public schools, Trafalgar, Ind.; instructor in methods, Richmond Normal School, Richmond, Ind.; principal Albuquerque Academy, Albuquerque, N. Mex., 1887–1891; superintendent Albuquerque public schools, Albuquerque, N. Mex., 1891–1897; principal of normal department, University of New Mexico, 1897.

Atanasio Montoya, jr., instructor in Spanish; studied in University of New Mexico, 1893–1896; instructor in Spanish, University of New Mexico, 1896.

Frank S. Maltby, A. B., M. S. (to Jan. 1899), director of the gymnasium and registrar; A. B., Moore's Hill College, 1893; Johns Hopkins' Medical School, 1893-1895; M. S., University of New Mexico, 1899.

John Weinzirl, M. S., vice-director of Hadley Climatological Laboratory; professor of bacteriology and chemistry; graduate State Normal School, River Falls, Wis., 1893; B. S., University of Wisconsin, 1896; graduate student in University of Wisconsin and University of New Mexico, 1896–1898; M. S., University of New Mexico, 1898; M. S., University of Wisconsin, 1899; assistant professor of biology in University of New Mexico, 1898–99; professor of bacteriology and chemistry in University of New Mexico, and vice-director of Hadley Climatological Laboratory, 1899.

George E. Coghill, A. B., M. S. (absent on leave during 1891), assistant professor of biology; Shurtleff College, 1891–1893; A. B., Brown University, 1896; M. S., University of New Mexico, 1899.

Edward P. Childs, B. S., dean of the College of Science, Literature, and Arts, and professor of physics and mathematics; Michigan University, Denison University, and Harvard Summer School; B. S., Denison University, 1894; professor of physics and mathematics in Fargo College, 1891–1893; instructor in mathematics in Denison University, 1893–94; acting professor of physics and chemistry in Denison University, 1894–95; instructor in physics and chemistry in Pueblo High School, 1895–1898; professor of physics, chemistry, and mathematics in the University of New Mexico, 1898.

Wilhelm Fick, Ph. D., professor of German and English literature; Harvard College, 1887–88; University of Breslau, 1889–90, 1891–1893; Ph. D., University of Berlin, 1890–91; instructor in English and German, Victoria College, University of Toronto, 1893–94; lecturer in German, 1894–1897; examiner in arts, University of Toronto, 1893–1897; instructor in German, Colorado College, 1897–98; University of New Mexico, 1899.

Ella D. Coltraine, principal of the Model School and Critic Teacher.

Mary E. Gilmore, director of the music department and teacher of the piano and organ; Genesee, N. Y., Normal; studied with A. R. Parsons, Metropolitan College of Music, New York, and with Emil Liebling, Chicago.

J. Franklyn Messenger, A. B., instructor in psychology and philosophy; University of Kansas, A. B., 1895; Harvard University, 1897–98.

Catherine Fields, instructor in English and director of Woman's Gymnasium, 1900.

M. Custers, custodian and librarian.

MODERN UNIVERSITY.

The commencement exercises of the University of Albuquerque, held this week, attracted attention beyond the boundaries of the Territory, because at the same time the beautiful Hadley laboratory was dedicated. Mrs. Walter C. Hadley donated $10,000 toward the erection of the building, which had become a necessity for the rapidly extending work of the university.

The University of New Mexico is an institution of higher learning of which New Mexico has every reason to be proud. The work it has accomplished will compare favorably with that of other State universities of the West, and the high standing of its president, Clarence L. Herrick, in the scientific world should and does draw to it pupils from other States.

In the line of original research the university is doing pioneer work in New Mexico, and the investigations carried on at its laboratory are of great benefit not only to the Territory, but to the world at large.

Increasing facilities.—The university has been in successful operation for eight years, having conferred during this time 30 diplomas of graduation and many certificates of satisfactory work in more limited courses of study. The standard of work has steadily risen, and the facilities for the study of the liberal arts and sciences are being continually increased. Material development has kept pace with internal growth, and the university, with its commodious buildings and growing apparatus and library, can now offer better facilities for study and scientific research than ever before, embracing a wide variety of subjects taught by specialists in every branch.

The geological survey has been prosecuted with energy. The work of the Hadley laboratory of climatology is progressing satisfactorily, and many interesting data are accumulating, bearing on the effect of the climate of the Territory upon disease. The Hadley laboratory is completed, and will be furnished and ready for occupancy by the beginning of the next school year.

Buildings.—On a commanding site, some distance east of the railroad depot and on Railroad avenue, are the university buildings, from which is obtained a good view of the mountains to the northeast and the Rio Grande Valley to the west and south. The main building is a large and commodious brick structure of three stories besides the basement. On the first floor are four recitation rooms and two offices; on the second floor are also four recitation rooms, laboratory, and cabinet, and on the third floor is a laboratory and the large assembly rooms now containing the museum. The basement is occupied by the heating and ventilating apparatus, and has four large rooms for laboratories.

The gymnasium.—The gymnasium is a substantial building 30 by 50 feet. It is provided with the best of apparatus, which has been largely added to during the past year. Provision is made for physical measurements and record. The physical-culture work is under expert supervision, both for the young men and the young women. Provision has also been made for military drill. Outdoor athletics are encouraged within the bounds of moderation.

A curious fact.—A very interesting result of the study of the physical measurements already taken is the discovery of the fact that young persons who have spent the formative years of their lives in New Mexico upon the plateau seem, with hardly an exception, to have developed a greater lung capacity than is usual in students of the same age in Eastern institutions, so that, from the standpoint of physical development, it is highly desirable that children, especially if any tendency to deficiency in this direction is suspected, should have the opportunity to pass the years from 10 to 20 in this region, and it is a matter of congratulation that there is now an opportunity to accomplish this result with no sacrifice of educational facilities.

The new laboratory.—During the past year there has been erected upon the campus east of the main building a commodious laboratory for the purposes of the climatological study already begun. The building will also serve to house the several laboratories, and will add a great stimulus to all the scientific work in the institution. The building is the result of the generous gift of Mrs. Walter C. Hadley, which has been supplemented by donations from friends of education throughout the Territory. The total cost will be about $20,000. While exceedingly attractive in appearance, the laboratory is one of the most satisfactorily arranged scientific buildings in the West.

Dormitory.—It is the intention of the board of regents to provide, by the beginning of the next session, a dormitory building for the accommodation of teachers and students who wish to live on the university grounds. It will be furnished with all the modern appliances of comfort, and will be under the management of some competent and reliable person, who will be prepared to give board and careful attention to its occupants.

Library and reading room.—The general library now contains over 3,800 bound volumes and 1,000 pamphlets, including the standard works of reference. From the proceeds of the annual incidental fees considerable additions are made, and the university is also the depository for public documents for New Mexico. From this source many most valuable books of reference are being received. This portion of the library is accessible to the public at all reasonable hours.

Courses of study.—Both a classical and scientific course are provided for, and the student has the choice of a number of elective courses. While a preparatory, a commercial, and a normal department are conducted in connection with the university, yet the university proper has as high a standing in its courses as have the leading universities of the East. It is no longer necessary for New Mexico parents to send their grown-up sons and daughters to other States for a university course, for the University of New Mexico offers all that is essential in the best university course, with the advantage of being situated in New Mexico's incomparable climate, and paying special attention to the needs of New Mexico. The university is coeducational, and while most of its students are from Albuquerque, yet a considerable number come from other parts of the Territory, and many register from other States.

NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS AND AGRICULTURAL EXPERIMENT STATION.

MESILLA PARK, N. MEX., *July 1, 1900.*

HON. MIGUEL A. OTERO,
Governor of New Mexico.

SIR: I have the honor to submit the following statement concerning the New Mexico College of Agriculture and Mechanic Arts for the year ending June 30, 1900, incorporating the reports of several of the heads of departments:

From the beginning the college has steadily grown in the number of students in attendance and in the confidence of the people, until for the last three years there has been an enrollment of more than 200 students.

Four general courses are offered, namely, agricultural, mechanical engineering, civil engineering, and scientific, each of these being four years in length, leading up to the degree of bachelor of science. Besides these there are shorter courses in stenography and typewriting and in Spanish stenography.

During the present year a number of important advances have been made.

An irrigation engineer, who will be professor of civil engineering in the college, has been added to the station staff in the person of Mr. W. M. Reed, C. E., an engineer of large experience in the Territory, who has already conducted irrigation investigations in the Pecos Valley for the United States Department of Agriculture.

DEPARTMENT OF ENGLISH AND LATIN.

English.—In the English course the time is about equally divided between literature and rhetoric. In the latter work the "incidental" method of instruction has been adopted here. The student is required to express himself as carefully and idiomatically in his history, science, foreign language, and other classes as he is in his English class. Every piece of written work is thus made an exercise in composition, and is submitted to the instructor in rhetoric for criticism and afterwards returned to the student for correction. One of the great advantages of this plan is that the bane of the English course, the formal composition theme, is largely done away with, with a consequent economy of time and labor. During the past year some attempt has been made, by means of forensic exercises, to give instruction in moral expression. The work has proved more successful than might have been anticipated, although of course here, too, the "incidental" method is the only really effective one. Hereafter one full year in the history of English literature will be required of all students. An endeavor will be made to present our literature as an organic growth and as a natural outcome of race characteristics and climatic and social conditions. In connection with this work the recent large accessions of standard literature to the general history will be especially valuable.

Latin.—In view of the increasing demand for instruction in Latin a three-year course is now offered. The department is well equipped with all reference books necessary for the work.

DEPARTMENT OF ENGINEERING.

Engineering.—As a supplement to last year's report, which stated the purposes of the department and gave an outline of the work afforded to students who elect engineering and a brief description of the equipment, the following may be added: The work the past year has been the most satisfactory of any yet attempted in the history of the department. The engineering department was enabled to have a regular second assistant to replace the irregular and uncertain help of several students, and while there is still considerable work available for students who are capable, yet the regular operating work was so heavy that it was impossible to make a success of it on the old plan.

Besides enabling us to give better facilities for the study of the design and operation of steam and oil engines, the board of regents has been very liberal in its appropriations to the department for additional equipment. For the better study of the strength of materials there has been purchased a 60,000-pound Olsen testing machine, with a full set of attachments for making tensile, compressive, and transverse tests. For electrical engineering work a Weston ampere meter and a milivolt meter with shunts have been added, besides new galvanometers, resistance boxes, etc., in the physical laboratory, which are available to students taking this work. For enlarging the scope of the shop practice there has been purchased a complete brass foundry outfit, a sensitive drill for small work, a pipe-cutting and threading machine, and a standard electric clock having a pendulum which beats seconds, and an assortment of special tools and appliances which are continually needed in laboratory work.

There is a considerable demand for technically educated men in the lines of work for which they may be prepared practically free of charge in this college. Even for those who do not take the advanced studies and graduate there is very great value in the shop practice and drawing. This is one feature wherein the agriculture and mechanic arts colleges excel the nontechnical institutions. Besides offering the regular college training, the agriculture and mechanic arts college gives at the same time an industrial practice which can not be acquired at home or during the regular pursuit of a living in the majority of cases, as can to a considerable degree history, literature, and kindred subjects. As but a small percentage of students who enter college ever graduate, it is hoped that the full value of shop practice may be recognized in the case of all students attending the institution following definite courses arranged to meet all the requirements from the lowest to the highest grades.

The work of the institution has developed to such an extent that in future civil and irrigation engineering will constitute a separate department, the new professor taking charge of the work July 1, 1900.

DEPARTMENT OF POLITICAL AND ECONOMIC SCIENCE.

The two technical courses of this department are: An exposition of the general principles of economics, in which Davenport's Authors of Economic Theory is the handbook used, the subject being developed in the main by means of assigned readings and oral discussions. Collateral reading on special topics is assigned to the several members of the class, upon which they are required to report.

A comparative study of the development of government: In which the same general method is followed as in the course in political economy—assigned readings, recitations, and discussions, oral and written, by the class as a whole, and collateral reading and oral and written reports upon special reports by the members severally. Woodrow Wilson's The State is the text-book used.

In addition to giving these courses, the head of the department (who is the president of the college) also assists in the work of the department of history and philosophy, giving to the seniors a course running throughout the year, entitled "The history of civilization," in which the economic and political, as well as the religious, philosophical, and scientific development of mankind is traced. He also offers an elective course of a dozen lectures on the theory of education.

PREPARATORY DEPARTMENT.

This department is made necessary by the fact that the public schools of the Territory, except in the larger towns and cities, are unable as yet to prepare students for collegiate work. It is therefore one of the oldest departments of the college, although it now has a much smaller proportion of students of the institution than in the earlier years of its history. Quite an addition has been made recently to its equipment, which will materially aid its work.

Several modern ideas have been introduced during the past year. One of these, Mr. J. Liberty Tadd's system of manual training, has produced some remarkable results. An exhibit of some of this work at the last meeting of the Texas State Teachers' Association attracted a great deal of attention and elicited much favorable comment.

A system of self-government in which the students assumed control of the discipline of their respective classes was introduced with some success and will be continued.

Besides these and other innovations, the instruction in the ordinary branches is well up to date, making, it is thought, a progressive modern school second to none in the Southwest.

DEPARTMENT OF CHEMISTRY.

The work of this department, like that of several other departments of the institution, consists of two parts—the instruction of the college students and the agricultural experiment station work.

In the college work the year just closed has been a very successful one. A larger number of students have received instruction in the department than ever before.

The number of students receiving instruction in the chemical department of this institution is, of course, still small compared with many of the older Eastern institutions. This institution, however, compares very favorably in this respect with many similar institutions in the West, and the fact that the number of students is increasing from year to year shows a growing appreciation by the people of the Territory of the advantages offered here.

The chemical department is one of the best equipped departments of the institution. The laboratories are new and were specially designed to accommodate the work. They are well lighted and ventilated, and conveniently located on the first floor of the new science building. The equipment of the laboratories is modern and first class in every particular, and is constantly being increased as rapidly as the funds will permit. It is confidently believed that an inspection of our plant will convince parents having children to educate of the uselessness of sending them East to secure the benefit of laboratory facilities. In fact, in consequence of the necessarily small number of students receiving instruction, it is possible to allow students the use of a larger amount of apparatus and to give them more personal attention than would be the case in many of the older institutions.

The instruction given in this department is made as practical as possible. The first aim is to present a general outline of the subject such as any student of science should have. This is intended both as a valuable addition to the student's general knowledge and as a basis for advanced work, both in this department and other departments of the institution. After the fundamental text-book work the student's work is very largely in the laboratories. He is taught the various analytical processes by actual practice, and should be fitted at the end of his course to take up some line of technical chemical or metallurgical work, if he so desires.

The character of the advanced work taken is left very largely to the choice of the student. Thus work may be selected relating to the composition of agricultural products, the composition and metallurgy of ores, or along such other line as may be of special interest to the student.

Owing to a demand for the same, it was decided, after consultation with the president of the institution, to considerably increase the lines of work offered in the chemical department.

The work of the chemical department of the experiment station from July 1, 1899, to July 1, 1900, was, in brief, as follows:

The sugar-beet work carried on during 1897 and 1898 was continued during 1899. In the spring of 1899 seed was sent to the substations and to a number of farmers in different parts of the Territory. In the fall samples of the beets grown from this seed were analyzed in the laboratory. The results confirmed the conclusions reached from the work of 1897–98. It is evident that a number of sections of the Territory can produce remarkably high-grade beets, both as to sugar content and purity. This has been found to be especially true of the section around Santa Fe, the Animas Valley in San Juan County, and portions of Mora and Taos counties. The sugar-beet work was very materially aided by the United States Department of Agriculture, which furnished seed for distribution and appointed the chemist special agent of the United States Department of Agriculture, thus enabling us to frank samples through the mail free of cost.

In cooperation with Prof. Elwood Mead, of the irrigation investigation work, Office of Experiment Stations, United States Department of Agriculture, a study of the water of the Rio Grande and Pecos rivers has been carried on. Samples were secured from these streams at regular intervals for several months and analyzed.

Besides the work mentioned above a considerable number of samples of water from different parts of the Territory have also been analyzed during the year. The results of this work, together with other data in regard to waters of the Territory that have been accumulating for several years past, and data from the cooperative work mentioned above, are published in bulletin form as station bulletin No. 34. This bulletin is now in press. Quite a large number of miscellaneous samples have also been analyzed during the year. These have included ores, natural fertilizing material, samples of natural saline deposits, a case of supposed poisoning of cattle, etc. In all, 189 samples have been analyzed between July 1, 1899, and July 1, 1900.

In July the chemist attended the meetings of the Association of Agricultural Colleges and Experiment Stations and Association of Official Agricultural Chemists, held in San Francisco. A technical paper relating to the analysis of beef was presented at the latter meeting. The chemist had the honor of being named as one of the members of the executive committee of the Association of Official Agricultural Chemists for the ensuing year.

In August the chemist prepared for the Office of Experiment Stations, for use at the Paris exposition, a history of the New Mexico Station from the time it was founded to August 1, 1899.

The equipment of the department within the time covered by this report has been maintained, but, owing to lack of funds, not materially increased.

DEPARTMENT OF ENTOMOLOGY.

For a number of years the entomologist had interested himself in the pigments of insects and plants without any particular expectation of economic results. Hence, when in May, 1900, Prof. E. O. Wooton drew his attention to the red coloring matter of the roots of the small boraginaceous plant *Eremocarya micrantha*, he was anxious to learn something of the properties of the pigment. A very brief investigation showed that the pigment belonged to the anthocyan series and that it behaved exactly like litmus, turning red in the presence of acids, blue in the presence of alkalis. The pigment was found to be superficial on the roots and readily soluble in cold alcohol. The plants were extremely abundant close to the college, the supply being apparently unlimited. From these and other considerations it seemed that we had here an excellent native substitute for litmus, which might very probably possess commercial value. Not only was the pigment purer than commercial litmus, but its preparation was very much simpler and the roots were easily obtained. The matter is now being further investigated by the division of botany, United States Department of Agriculture, and we shall doubtless be informed of the results before very long.

The summer of 1899 and the month of June, 1900, were spent in and about Las

Vegas. Most of this time was devoted to teaching, but considerable collections of insects were obtained, including a number of hitherto undescribed wild bees. The injurious insects observed in this region were few, the most destructive being the tent caterpillar (*Clisiocampa fragilis*), which ate up nearly all the leaves of the quaking aspens on the Pecos Forest Reserve. The cottony maple scale (*Pulvinaria innumerabilis*) was observed on shade trees in the streets of Las Vegas, but it did not seem to be seriously harmful or to increase so rapidly as it does in some of the Eastern cities.

The month of October, 1899, was spent in Salt River Valley, Arizona, in the service of the Arizona Experiment Station. The results of this trip have been mostly set forth in a bulletin published by the Arizona station. The cost was borne by the Arizona station, and $50 was paid to the New Mexico station on account of the work done.

One result of the Arizona investigations was of some importance to New Mexico. For the first time the entomologist was enabled to study the true Lower Sonoran Zone, and as the result of this to define the Middle Sonoran Zone of New Mexico more accurately than had hitherto been possible. It appeared that, as regards the native plants and animals, the Middle and Lower Sonoran zones were so similar as to be scarcely separable, but that the horticultural conditions in the two zones were almost entirely diverse. Hence the Middle Sonoran, which includes the Mesilla Valley of New Mexico, may be fairly defined as a zone having the native flora of the Lower Sonoran, with the cultivated products of the Upper Sonoran. It is hoped that these investigations may tend to reconcile the differences of opinion which have existed regarding the mapping of the zones in New Mexico and Arizona, and to prevent further confusion. As was noted in the paper of the preceding year on vernal phenomena, the indications are that we have in the Middle Sonoran a peculiar region, for which we should develop new and specially adapted varieties of fruits and other cultivated plants.

In the spring of 1900 experiments were begun with a new waterproof whitewash, which was applied to the trunks of fruit trees with the idea of filling up the cracks in which the larvæ of the codling moth pupate and, incidentally, of killing any scale or other pest on the trunk of the tree. Only a small quantity of the material was available, as, although an order was placed for a larger supply, for some unexplained reason the material was not received.

Spraying experiments with white arsenic for the destruction of the codling moth were begun in the experiment station orchard in the spring of 1900, and are still in progress. This work was planned in cooperation with the horticulturist and is being carried out by the horticultural department.

The most important new pest of the year was a beetle, an apparently new species of *Sphenophorus*, reported as very destructive to corn on the Upper Gila, both in New Mexico and Arizona. Inasmuch as the measures to be taken against this insect depend largely on the discovery of its natural (native) food plant, it is recommended that the entomologist be sent to investigate the matter on the spot at such time as may prove convenient.

Publications of the entomologist, July–Dec., 1899.

(1) Variations of Helix hortensis at Rockport, Mass. Nautilus, July, 1899, p. 32.
(2) Bifidaria armifera var. nov. ruidosensis. Nautilus, July, p. 36.
(3) Education by doing (Review of J. L. Tadd's New Methods in Education). Inland Educator, July, pp. 260–262.
(4) A troublesome pest. Albuquerque Journal-Democrat, July 14.
(5) (Letter on Hippodamia convergens.) Albuquerque Journal-Democrat, July 16.
(6) (With H. A. Pilsbry.) Ashmunella, a new genus of Helices. Proc. Acad. Nat. Sci. Phila., pp. 188–194.
(7) A first list of the Hymenopterous families Tenthredinidæ, Siricidæ, Chrysididæ, Proctotrypidæ, Cynipidæ, Chalcididæ, and Braconidæ, collected in New Mexico. Trans. Kansas Academy of Science, XVI, pp. 212–216.
(8) A reply to Mr. Marlatt's article on sources of error in recent work on Coccidæ. Science, July 21, pp. 86–88.
(9) Coccid pests on sugar cane. Bull. Miscell. Information; Royal Gardens, Kew, pp. 6–7.
(10) The New Mexico biological station. First catalogue New Mexico Normal University, pp. 50–52.
(12) (With H. A. Pilsbry.) Another new Ashmunella. Nautilus, Sept., pp. 49–50.
(13) Some notes on Coccidæ. Proc. Acad. Nat. Sci. Phila., pp. 259–275.
(14) A new Dactylopius (fam. Coccidæ) from Arizona. Canad. Entom., Sept., p. 267.
(15) A new Meloid beetle parasitic on Anthophora. Psyche, Oct., pp. 416–417.
(16) The Panurgine bees. Psyche, Oct., p. 419.

(17) (On the insect pests of Salt River Valley, Arizona.) Arizona Republican, Oct. 22, p. 8.
(18) Notes on Australian Coccidæ—3. Two new species and a new variety. Victorian Naturalist, Sept., pp. 88–89.
(19) Tables for the determination of the genera of Coccidæ. Canad. Entom., Oct., pp. 273–279; Nov., pp. 330–333.
(20) A new noctuid of the genus Cirrophanus. Canad. Entom., Oct., p. 288.
(21) (With P. J. Parrott.) (Description of Antonina nortoni, n. sp.) Canad. Entom., Oct., pp. 280–281.
(22) (Table for the separation of the forms of Aspidiotus allied to A. cydoniæ) in C. L. Marlatt. Science, Nov. 3, p. 658.
(23) Polygyra triodontoides (really texasiana, var.) in New Mexico. Nautilus, Nov., p. 84.
(24) New species of Andrena from Kansas. Entom. News, Nov., pp. 253–255.
(25) Psocus speciosus, Aaron. Entom. News, Nov., p. 266.
(26) The species of the bee genus Dieunomia. Entomologist, Nov., pp. 265–266.
(27) (With Wilmatte Porter.) Contributions from the New Mexico biological station, VIII. The New Mexico bees of the genus Bombus. Ann. & Mag. of Nat. Hist., Nov. pp. 386–393.
(28) The Coccidæ of Mauritius (Review of paper by d'Emmerez de Charmoy). Amer. Naturalist, Nov., pp. 899–901.
(29) Children and sugar beets: a parallel? Inland Educator, Dec., p. 204
(30) An alien clematis in New Mexico. Science, Dec. 15, pp. 898–899.
(31) A coccid from the Far North. Canad. Entom., Dec., pp. 369–370.
(32) (With Wilmatte Porter.) Contributions from the New Mexico biological station, VII. Observations on bees, with descriptions of new genera and species. Ann. & Mag. of Nat. Hist., Dec., pp. 403–421.
(33) Coccidology. (Review of E. E. Green, Coccidæ of Ceylon.) Natural Science, October, pp. 295–296.
(34) New Mexico biol. station. Natural Science, Dec., p. 463.
(35) New records of Coccidæ. Journal N. Y. Ent. Soc., Dec., pp. 257–259.
(36) Aleurodidæ. Biologia Centrali-Americana, Zoologia, Hemip.-Homop., vol. 2, pt. 2, p. 1.
(37) Coccidæ. Tom. cit., pp. 2–33.
(b) Han., Feb., 1900.
(38) The name Leonia. Psyche, Jan., p. 11.
(39) The danger of introducing insects on trees. Univ. of Ariz., Agric. Exp. Sta., timely hints for farmers, No. 7, Jan. 1.
(40) A horticultural quarantine bill. Albuquerque Journal-Democrat, Jan. 16.
(41) Winter remedies for injurious insects. Univ. of Ariz. Agric. Exp. Sta., timely hints for farmers, No. 9, Feb. 1.
(42) (With H. A. Pilsbry.) (Description of Zonitoides neomexicanus, n. sp.) Nautilus, Feb., pp. 114–115.
(43) Limas coccineus, gistel. Nautilus, Feb., pp. 117–118.
(44) What is the proper name of Lophyrus, Latreille? Entomologist, Feb., pp. 40–41.
(45) (Notice of Aquilegia desertorum) in M. Cooper. Southwest, Feb., p. 89.
(46) List of dipterous galls described from New Mexico. Southwest, Feb., p. 91.
(47) Notes on some Southwestern plants. Bull. Torrey Bot. Club, Feb., pp. 87–89.

SUMMARY BY SUBJECTS.

Entomology:	
Coccidæ	13
Bees	5
Other entomology	15
	33
Mollusca	7
Botany	3
Education	4

DEPARTMENT OF HISTORY AND PEDAGOGY.

During the scholastic year 1899–1900 the department of history and pedagogy has been a reasonably successful one. A class of about twelve students pursued the subject of general history during the whole year—four hours per week. The time was not sufficient to accomplish all that is generally expected of such a class. During the first and second terms a class of about ten students pursued the subject of elementary psychology practically applied. They took much interest in the subject, and, I doubt not, received lasting benefit. During the third term three young ladies took the subject of English history. This was an exceptionally good class, but, of course, the time was not sufficient to gain even an outline of this extensive subject. During the second term I had a class of three in the subject of advanced, or senior, psychology. A portion of this class had had one term's work in this subject previously. The class did very satisfactory work. The same students pursued the history of civilization in Europe during the third term, using Guizot's Lectures as a text. The class did excellent work.

DEPARTMENT OF MATHEMATICS.

The classes ranged from elementary algebra in the subfreshman year to the calculus in the junior year. The subfreshman class in algebra recited four times per week in the first and second terms, and five times a week in the third term, covering the subjects from simple simultaneous equations to logarithms, inclusive, in a high-school text-book. The freshmen studied plane and solid geometry daily throughout the year. About one-third of the time devoted to this subject was given to demonstration and solution of original exercises. Originals constitute a very important part of the examinations, since they are the true test of the rate at which the student is mastering this important branch of mathematics. The sophomores studied trigonometry daily during one term. The junior students in engineering pursued the study of analytic geometry daily during the first half of the year, and calculus during the remainder of the year. In calculus the methods of rates and of limits were employed.

DEPARTMENT OF SPANISH.

Spanish is optional with Latin in all courses in the first and second years, and is elective in the third year. This college has been quick to recognize and efficient in preparing for the great importance of Spanish in the education of the youth of the Territory. Being, as is Spanish, the language of the majority of the citizens of this Territory and that of the inhabitants of all the countries south of us on the American continent, it becomes almost a necessity, and a knowledge of it is of the greatest practical value. Owing to recent developments in our national affairs, as well as the increasing trade of this country with countries of Spanish-speaking people, that language has attained importance second only to English. Therefore this institution has provided courses which afford not only a literary knowledge of Spanish, but also competently prepare the student for work in commercial lines. There has long existed a great demand for Spanish-English stenographers, and the number there have been calls for at this college has been far greater than the supply.

The first and second years of Spanish are dedicated mostly to acquiring a thorough and general knowledge of the language, while the work of the third year looks especially toward such practical training, letter-writing, dictation, etc., as is of most benefit for business purposes.

In connection with the Spanish classes there is a class of Spanish-speaking pupils (in great part consisting of those from the neighboring Republic of Mexico), to whom Spanish is taught.

DEPARTMENT OF ZOOLOGY AND SOIL PHYSICS.

ZOOLOGY IN THE COLLEGE.

The following work was done in the department of zoology of the college:

The junior class met five hours per week for two months of the first term and studied the physiology of the bony system, circulatory system, and nervous system, using Martin's "Human Body," advanced.

The sophomore class worked five hours per week in the laboratory throughout the three terms. They studied the anatomy of several typical invertebrate animals, and spent the remainder of the time on vertebrate anatomy, studying in considerable detail the bony system, digestive system, and circulatory system. The parts were first demonstrated to students, and they then studied them under the supervision of the teacher.

SOIL PHYSICS AT THE EXPERIMENT STATION.

A. *Soil moisture.*—The observations on the moisture in the soil of the corn experiment, begun in the spring of 1899, continued until the corn was harvested, October 5, 1899.

These observations embraced the study of the per cent of moisture shown by the electrical soil hygrometer, together with monthly checks made by boring samples and determining the moisture by dryings. The results of the last season were tabulated and platted, and the most valuable part of the data is embodied in Bulletin No. 31, issued in cooperation with the Agricultural Department.

The electrodes were installed again in the same plats in May, 1900, and the observations are being continued in the same manner as during last season. Last season the moisture was measured at depths of 6 to 9 inches and 21 to 24 inches; this season the measurements are being made at 3 to 6 inches and 15 to 18 inches.

In addition to the above, samples have been taken in various other places on the station farm and their moisture content determined.

Weekly samples were received until October from the Aztec and Las Vegas substations, and their moisture content determined.

B. *Amount of water used in irrigation.*—Records were kept for the Division of Irrigation investigations of the United States Department of Agriculture on the amount of water used in irrigating the experiment-station orchard until December, 1899.

C. *Alkali and drainage investigations.*—Owing to the resignation of the agriculturist the proposed work on reclaiming alkali land by drainage was put in charge of this department. A month, during March and April, 1900, was spent at the Roswell substation on this work. About 4 acres of land, lying adjacent to the Hondo River, on the Roswell substation farm, was underlaid with tile. The experiment embraces the use of tiles of various sizes, laid at different depths and distances apart. Numerous samples of the soil on this plat and the adjoining land were taken, and the amount of soluble salt determined by the electrical method. This land will, after drying out, be flooded and allowed to drain until the amount of soluble salts is reduced to a point where they will not be injurious to plant growth. Various crops will then be planted on this land.

Numerous samples from the station farm have been tested for salt, but in no case has an injurious amount been found.

Considerable difficulty having been experienced in getting samples of the dry soils of the Rio Grande Valley, the writer has modified the ordinary wood auger by putting a movable brass casing on it. This device has proved very satisfactory.

D. *Meteorology.*—The meteorological instruments have been moved from the farm buildings and placed in and near the science hall. The usual observations have been taken by Mr. A. M. Sanchez, who has also rendered valuable assistance in the soil work, and reported to the New Mexico section of the United States Weather Bureau.

In addition to the regular meteorological observations, the rate of evaporation from a free water surface—a 3-foot cubical tank sunk flush with the ground—has been measured weekly.

E. *Miscellaneous.*—A portion of November and December, 1899, was spent, through the kindness of the chief, in the laboratories of the Division of Soils, United States Department of Agriculture, in Washington. This time was devoted mainly to the study of alkali problems. Several investigations bearing upon the alkali problem are under way, and data are being collected on the waters used in irrigation.

A press bulletin discussing the variability in growth of the alfalfa on the experiment-station farm was issued a short time ago. The correspondence relating to the work of this department has received the necessary attention.

DEPARTMENT OF STENOGRAPHY AND TYPEWRITING.

The enrollment in the above department during the past year has been larger than ever before in the history of the department. The class in stenography numbered 20 and the class in typewriting 21. Of those entering the classes most have completed the year's work, which has been satisfactory throughout.

The work in stenography has covered two hours a day throughout the year, and that in typewriting not less than one hour a day. Office practice, consisting of general office work, has occupied one hour a day through the third term. The examinations held at the close of each term have shown thorough and conscientious work.

In no previous year has the demand existing for competent English-Spanish stenographers been more apparent. For a number of years this department of the college has given more or less attention to the training of stenographers in both Spanish and English, and the calls made during the past year for young men and women competent to do stenographic work in both languages have been far more numerous than could be supplied. Before the close of the year's work 6 members of the class had left to accept positions, and others have gone out since. The salaries paid for English-Spanish stenographers are good, and the openings that exist in this line of work are usually such as to offer good opportunities for advancement.

It becomes more evident each year that the opportunities existing in this college for the training of stenographers in both Spanish and English are unique. The extensive use of the Spanish language by the inhabitants of this country and the character of the work done in the department of the Spanish in the college should both prove attractive to the many who are now seeking opportunities for gaining a practical and commercial knowledge of that language.

An exhibit of the work done in this department during the past year was made during commencement week, and later at the Chamber of Commerce building in El Paso.

The department of agriculture and horticulture has been reorganized under a professor who has received his training and gained his previous experience at one of the strongest agricultural colleges in the United States—that of Iowa. The farm has been stocked with well-bred cattle and the general equipment greatly improved, and the course of study has been so carefully arranged as to offer now one of the best proportioned courses in agricultural science that is provided in the United States.

Manual training of a highly educative type has been introduced into the preparatory department. Formerly there was practically no manual training for the student until he entered the collegiate department, and as childhood is the time to begin to acquire manual dexterity, this change is proving very beneficial.

The whole curriculum has been carefully gone over and improved. All of the collegiate courses that have been offered nominally for a number of years will henceforth be given, and well given. Lack of equipment has prevented the agricultural course from being what it should be in the past, and the same thing has been true of the civil engineering course. Our agricultural course is now a strong one, considerably superior to that of the average agricultural college. The civil engineering course is not yet as fully equipped as we would wish it to be, but a good course in civil engineering can now be given by expert teachers, and another year we hope to have the department in thoroughly satisfactory condition. The general or scientific course is now much richer in electives than formerly, and affords the youth of New Mexico an opportunity for an excellent education of a high order. What is known as a classical education we do not provide at all. Greek does not appear in our curriculum, and only so much Latin as is necessary for a good scientific education; but, except that we are still a little weak in modern languages, the education now afforded by this institution may well challenge comparison with that of the best schools and colleges not only of the West, but of America and of Europe.

The laboratories are unusually well equipped and are being added to continually. Several additions have been made to the equipment in the agricultural and mechanical engineering departments and in the departments of physics and chemistry, and the apparatus in the biological department has also been added to. In the new science building are located the chemical laboratories and lecture rooms, biological laboratory and lecture rooms for teaching anatomy and physiology, botanical laboratory, rooms for the entomological department, and the domestic economy laboratory. The building is an ornament to the place and fills a long-felt need. The hall for young women is now completely furnished and in use, and there is an excellent prospect for a hall for young men.

Many valuable experiments have been and are being carried on in the New Mexico agricultural experiment station (which is a part of this institution). Those relating to the cultivation and care of sugar beets have been especially satisfactory, and a large number of farmers in different sections of the Territory have cooperated in this work, with the result that it has been practically demonstrated that New Mexico can grow as fine sugar beets, running as high in sugar content, as are grown anywhere in the world. Perhaps the most valuable experiment now being carried on is that in subdrainage as a remedy for too much alkali—an experiment that is being conducted very successfully at our branch station in the Pecos Valley.

The college invites the patronage and confidence of the people of New Mexico because of its large corps of efficient teachers, its well-equipped laboratories, its unsurpassed location, and the genial climate of the section in which it is built, which makes it the finest college of its kind in the entire Southwest.

Board of regents of the college.—L. Bradford Prince, LL. D., Santa Fe, president; P. H. Curran, Las Cruces, secretary and treasurer; G. A. Richardson, Roswell; A. A. Jones, Las Vegas; P. Moreno, Las Cruces; Miguel A. Otero, governor, Santa Fe, exofficio; Manuel C. de Baca, superintendent of public instruction.

The officers of the college and experiment station for the year ended June 30, 1900, were as follows:

Frederick W. Sanders, Ph. D., president, professor of political and economic science, and director of the agricultural experiment station; Clarence T. Hagerty, M. S., professor of mathematics and astronomy; Arthur Goss, M. S., A. C., professor of chemistry, and vice-director and chemist of the station; Frank W. Brady, M. E., professor of mechanical and civil engineering; Ida M. Jones, professor of Spanish; T. D. A. Cockrell, professor of entomology, and entomologist of the station; Hiram Hadley, A. M., professor of history and pedagogy; E. O. Wooton, A. M., professor of botany, in charge of geology and physics, and botanist of the station; F. P. Barker, LL. B., professor of English and Latin; R. R. Larkin, B. S., principal of the preparatory department; J. D. Tinsley, B. S., professor of zoology, and soil physicist and meteorologist of the experiment station; Charles A. Keffer, professor of agriculture and horticulture to January 1, 1900; John J. Vernon, B. S. Agr., professor of agriculture and horticulture since May 1, 1900; Alice Harning, B. S., professor of domestic economy, dean of women, and matron of women's hall; Frank B. Lester, registrar, librarian, and instructor in stenography and typewriting.

Instructors and assistants.—R. Fred Hare, M. S., instructor in chemistry and assistant chemist of the station; Charles Mills, instructor in college shops; Ellen F. Gibson, instructor in elocution and physical culture, and assistant in the preparatory department; Mrs. Laura Frenger, instructor in music; Fabian Garcia, B. S., assistant in agriculture; Alfred M. Holt, M. S., second assistant station chemist; Joseph F. Bennett, jr., M. S., assistant in botany, geology, and physics, and assistant botanist of the station; Humboldt Casad, assistant in horticulture; Geraldine Combs, assistant in the preparatory department; He en M. McGregor, stenographer and assistant stenographer; Florence G. Thornton, assistant in the preparatory department; Archie B. Sage, assistant in the mechanical engineering department; Charles E. Mead, B. S., superintendent of San Juan Valley Branch Experiment Station (Aztec); John S. Thornhill, superintendent of Las Vegas Branch Experiment Station.

The officers for the coming year are the same as given above, with the following additions and exceptions: Mr. W. M. Reed, C. E., has been appointed professor of civil irrigation engineering, and irrigation engineer of the experiment station; Messrs. Hare and Garcia have been promoted to assistant professorships, and the latter will be horticulturist of the station; Mr. W. A. Sutherland, B. S., has been appointed instructor in Spanish and Latin; Miss Charlotte A. Baker, assistant in English and librarian, and Mrs. L. L. Brown, assistant in the preparatory department. Professors Cockrell and Jones have resigned their professorships, and Miss Gibson her instructorship, but the former will continue to be consulting entomologist of the station. Professor Wooton's title will be professor of biology, instead of professor of botany; Professor Tinsley will be professor of soil physics, and soil physicist and meteorologist of the experiment station, and superintendent of the Roswell substation.

DEPARTMENT OF BOTANY.

[In charge of geology and physics.]

College work.—This department has under its charge the work in botany, geology, and physics. The work in each subject occupies one whole year of time, botany having the equivalent of six hours and the others five hours each week.

The method of teaching these subjects pursued is as much the laboratory method as facilities will permit, and it is possible to follow the method almost entirely in the subject of botany.

Students in this subject are supplied with good compound microscopes and all other necessaries for making a careful microscopic examination of different kinds of vegetable structures. Besides the laboratory work, a text-book is used as a guide, and both are supplemented by lectures.

The work in physics consists of lectures, with assigned text-book reading and demonstration experiments performed by the teacher and assistant in class. Strictly laboratory physical measurements, except of the simplest kinds, have not been possible, for want of the necessary apparatus, but much of the needed apparatus will be added during the summer of 1900.

The work in geology comprises a term in mineralogy and lithology, a term in dynamical and structural geology, and one in historical geology and paleontology. A rather large assortment of minerals is placed in the hands of the students for study, and some work in determinative mineralogy is attempted. A small collection of fossils is used in the work of paleontology.

The department has excellent quarters for botanical work in the new science hall, and the work in geology is temporarily placed in one of these rooms until it is possible to arrange suitable accommodations for a museum. The physical laboratory, in the engineering building, furnishes good accommodations for this work, and will be much better when it is thoroughly equipped for student laboratory work.

Experiment-station work.—On account of the large amount of teaching in charge of this department, not a very great deal of experimental work has been done the past year. A study of the flora is being carried on, with the ultimate purpose of the publication of a manual of the flora of the Territory, and to this end plants are being collected at all times and preserved in the college herbarium. This herbarium is now of some size, and is fairly representative of the flora of the Territory, besides containing some other plants received from different parts of the United States. Some studies of the distribution of plants have been made, with the design of making a life-zone map of the Territory.

The summer of 1899 was spent in the field in the Sacramento Mountains making collections of plants in localities never before visited by a botanist. The season's trip has yielded between 3,000 and 4,000 specimens of dried plants, of which it is believed that several are new.

The head of this department is particularly anxious to become acquainted with the various investigations in the botanical field of this Territory, and offers his services for the identification of plants and the answering of general questions relative to this subject.

All such inquiries should be addressed to E. O. Wooton, botanist, experiment station, Mesilla Park, N. Mex.

LOCATION.

The New Mexico College of Agriculture and Mechanic Arts is situated at Mesilla Park, Dona Ana County. Its location in the Mesilla Valley gives it great advantages for agricultural experiments, and is a good one from a sanitary point of view. The valley is noted for being the largest fruit and alfalfa shipping point in the Territory, and is rapidly becoming known as perhaps the finest winter health resort in the United States. The college farm is crossed near the center by a fine driveway from Mesilla Park station to the college buildings. Visitors are always welcome. Mesilla Park is on the main line of the Atchison, Topeka and Santa Fe Railroad and is easily accessible from different parts of the Territory. Las Cruces, a town about 2½ miles distant, has a population of about 3,000 inhabitants. It has a public school, two mission schools, and a Catholic academy for the education of girls. The Presbyterians, Methodists, and Roman Catholics have church organizations, and students are always welcomed to their services.

ORIGIN.

The New Mexico College of Agriculture and Mechanic Arts, under a slightly different name, was established by the twenty-eighth assembly of New Mexico by act approved February 28, 1888. The purpose of the institution is defined in section 19 of this act:

"The agricultural college created and established by this act shall be nonsectarian in character, and devoted to practical instruction in agriculture, mechanic arts, natural sciences connected therewith, as well as a thorough course of instruction in all branches of learning bearing upon agriculture and other industrial pursuits."

The branches in which instruction may be given are set forth as follows in section 20 of the same act:

"The course of instruction of the college hereby created shall embrace the English language, literature, mathematics, philosophy, civil engineering, chemistry, animal and vegetable anatomy and physiology, the veterinary art, entomology, geology, and political, rural, and household economy, horticulture, moral philosophy, history, mechanics, and such other sciences and courses of instruction as shall be prescribed by the regents of this institution of learning."

By section 25 of the same act the assent of the legislative assembly was given to the establishment of experimental stations within the Territory of New Mexico in connection with the agricultural college, in pursuance of the act of Congress approved March 2, 1887—the Hatch Act.

INCOME.

The revenues of this college are derived from the following sources:

1. Students' fees.
2. Sale of college farm products.
3. Territorial tax and special appropriations.
4. The United States, under Congressional act of August 30, 1890—the Morrill fund.
5. The United States, under Congressional act of March 2, 1887—the Hatch fund.

The money received from students and from the sale of products from the college farm has so far been very limited and has been applied to the payment of such expenses as are not provided for by either act of Congress.

New Mexico Apples.

The Territorial act creating the institution provided for an annual levy of one-fifth of a mill, commencing with the year 1888. This levy now yields an annual income of about $6,500.

The Morrill fund was created by the United States law of August 30, 1890, "for the more complete endowment and support of the colleges of agriculture and mechanic arts in the several States and Territories." It is paid over to them before July 31 of each year. The college received this fund first in 1888, to the amount of $15,000. Henceforth the fund will amount to $25,000. This fund can be applied only to "instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their application in the industries of life and to the facilities for such instruction." No part of this fund may be used for building or repairs or for ordinary running expenses, such as salaries of administrative officers—as president, clerk, librarian, etc.—equipment of the library, and ordinary furniture, stationery, printing, etc., or for teaching any subject not referred to in the act. The theory of the Federal Government, in accordance with which these appropriations have been made, is that the State or Territory must provide the buildings and grounds and keep them in repair, and must also provide for all the general administrative expenses of the college, and that the Federal appropriation is to be used only for the purpose of paying teachers and supplying the necessary books and apparatus for teaching the specific subjects mentioned in the act.

By the United States law of March 2, 1887, the Hatch act, appropriations are made for the maintenance of experiment stations in connection with agricultural colleges in the several States and Territories. For the support of each station there is set apart the sum of $15,000 a year, payable quarterly. This money must be used for "paying the necessary expenses of conducting investigations and experiments and printing and distributing the results." Bulletins showing progress must be printed each quarter and sent to each newspaper in the Territory and to all farmers who apply for them. This fund first became available for the college in 1889–90 to the amount of $10,000. Since July 1, 1890, $15,000 a year has been received. After the first year only 5 per cent of this fund may be used to erect, enlarge, or repair buildings for the use of the experiment station, and no part of it may be applied to the expenses of instruction or to general college purposes. It must be applied exclusively to the carrying on of agricultural experiments and to the dissemination of the results thereof.

ENDOWMENT.

A bill has recently been passed by Congress granting this college 100,000 acres of public land, the proceeds of which are to form a permanent endowment fund. If this land be carefully located, it can be made to yield the college in time a fair endowment.

FREDERICK W. SANDERS, *President.*

NEW MEXICO MILITARY INSTITUTE.

HISTORY.

The New Mexico legislature of 1893 passed an act to establish a military school at Roswell, in Chaves County, but did nothing toward providing for its maintenance until 1895, when a donation of 40 acres of land from Mr. J. J. Hagerman was accepted for a building site.

The legislature of 1895 authorized an annual Territorial tax levy of twenty one-hundredths of one mill for the school's maintenance and the issue of bonds to the amount of $15,000 for the erection of suitable buildings. But as Congress failed to approve the acts of this legislature until the spring of 1897, the regents could do little more than inclose a plot of ground, secure plans for buildings, and wait until the bonds could be negotiated.

The bonds were negotiated in June, 1897, and the contract for the buildings was let and the work begun within a month thereafter. In March, 1898, the buildings were accepted by the regents, and by the following summer the barracks and schoolrooms were completely furnished and ready for occupancy.

A superintendent, corps of instructors, domestics, and necessary employees were secured, and the school was finally opened for the admission of students in September, 1898, at a total cost to the Territory of something less than $30,000.

The school, thus organized and equipped, took during its first session over one hundred students and earned in tuition fees something over $9,000. On the first day of session 1899–1900 the quarters for cadets were filled to their utmost capacity and students were refused admittance. The regents began at once a second residence building, filling it before ready for occupancy. They expect to erect shortly another large building, thus providing quarters for 50 more cadets. The school earned $11,000 from tuition fees, session 1899–1900. In every respect it has far exceeded the most sanguine expectations. The superintendent of public instruction for New Mexico, after his official visit in April, 1899, declared:

"The Military Institute at Roswell is an institution of which every New Mexico citizen has reason to be proud. The school must now be considered the leading educational institution of New Mexico."

As required by law, the adjutant-general makes at least one official inspection annually. In his report to the governor he said:

"The inspection was made on the 8th day of May, 1899, and was as thorough in every respect as the same could be made. The notice to the superintendent of the intended inspection was received by him on the same day as my arrival at Roswell, so that there was but little time for preparation, and the conditions I found must necessarily have been the ordinary or normal condition of the institution. I inspected every room in the building, beginning with the dormitories, and found the bedsteads used were of cast iron, made for one person, each room being occupied by two students. I tumbled the bedding off and closely examined the mattresses and bedding and found the same fresh, clean, and free from vermin. The floors and walls of the buildings throughout showed most cleanly care. Especial attention was given to an examination of the closets and the drainage therefrom. I found that a sewer pipe had been extended from the school building in a southeasterly direction to the river, affording perfect drainage from the closets and bathrooms. The plumbing seemed to be in perfect order, and I was unable to detect any bad odors in or about the closets, or about the entire building.

"I made a close examination of the groceries and provisions found on hand, and in every instance found the quality excellent and free from adulteration. I dined at the institute and was served with the same kind of food that was given the students. I found the food plentiful, well cooked, well seasoned, and, in fact, just such a dinner as may be found in the homes of people of middle life all over the country. * * *

"The college building is a handsome, substantial structure of brick, containing three stories and a basement, situated about one-half mile from the business center of Roswell. The grounds extend over 40 acres of land overlooking the town, and the situation is a beautiful and healthy one. The building contains 30 nice, airy, wholesome bedrooms, besides class rooms, office, kitchen, dining room, pantry, laundry, bathroom, and closets. The furnishings are substantial and comfortable. The recitation rooms are equipped with excellent twentieth century chair desks, which are said to be the most comfortable now in use. The building is heated by steam throughout from a large boiler in the basement, and there is a good supply of hot and cold water on every floor. The building is lighted by an excellent acetylene plant, located about 100 feet away. The water supply is furnished from a tank of 10,000 gallons' capacity, which is kept filled by means of a steam pump.

"An examination of the course of study reveals the practical nature of the school. Four years of preparatory work are required, so that any student can enter who knows how to read, write, spell, and apply the fundamental rules of arithmetic. The preparatory course is followed by four years of collegiate work. The studies are such as are usually found in institutions of like character. The text-books in use in the preparatory course are those adopted for use in the Territorial public schools. In addition there is taught the art of war, theoretical tactics, the manual of arms, and, in fact, everything usually taught in high-class military schools. Especial attention is paid to proper gymnastic exercises and reasonable and healthful athletic sports necessary to the physical, mental, and moral good of the students. * * *

"The eminent success of the institute in this, the first year of its existence, gives great encouragement for the future; this hope, however, may be frustrated by a failure to make prompt provision for its immediate necessities and for its expansion. Already the dormitories are filled to the limit of their capacity. There are 30 students in attendance who live or board in Roswell, outside of the institute. I regard it of the utmost importance and necessary to the success of the institute that all students should reside in the barracks. * * *

"There is an immediate demand for more commodious quarters. The institute should be provided at once with 30 more bedrooms, a room for a library, gymnasium, society halls, and storehouse. The laundry should be removed from the basement and placed in a separate building. I am aware that much of this can not be accomplished without legislative authority, but if there exists authority in the board of regents to provide for the more pressing needs of the institute by the construction of a temporary board structure, I should strongly recommend its exercise."

The New Mexico legislature of 1899 ordered an annual Territorial tax levy of twenty-seven and one-half one-hundredths of one mill for the institute's maintenance, which levy should produce an income of from $10,000 to $12,000 per year. The permanence and financial solidity of the school is thus established beyond controversy, for while the expense of maintaining the institute will never fall short of $20,000, the earnings and appropriations from the Territory have been thus far ample for its maintenance. Under recent act of Congress the school has 50,000 acres of land from which, it is hoped, a considerable income will be realized.

LOCATION.

The New Mexico Military Institute is located in Chaves County, just beyond the corporate limits of the town of Roswell, but within less than a mile from the courthouse. It would be difficult to find a better location for a military school. The school buildings are 3,700 feet above the sea, the best altitude obtainable, and for solid comfort and thoroughly modern conveniences are in keeping with the natural advantages. Few of the Eastern boarding schools are so snugly built or so well furnished. The town of Roswell has a population of 3,000 people, cultivated, law abiding, sober, and industrious. Most of the leading denominations have well-organized churches. The town maintains excellent graded schools. The moral and social influences are necessarily good. Roswell is on the Pecos Valley and Northeastern Railroad, which connects with the Texas and Pacific Railroad at Pecos and with the Santa Fe and the Fort Worth and Denver Railway at Amarillo, Tex. It is also reached by a daily stage line from Lincoln, N. Mex., and a triweekly stage from Fort Sumner.

The climate is incomparably perfect; the air is pure and bracing; the water excellent; there is very little snow and no rain during the entire session, and not a day when the sun does not shine. It is thus possible for the student to spend a large part of his leisure time out of doors, nor is it ever necessary to remit the military exercises on account of wet or inclement weather.

The Pecos Valley is celebrated throughout the world as a health resort, and the abundant supply of fresh water from the great springs and artesian wells at Roswell renders the town one of the most desirable places for residence in the Union.

The school has considerable patronage from Eastern States. Boys of weak lungs, delicate constitution, or health impaired by malaria or nervous disorders soon become strong and vigorous when placed at the New Mexico Military Institute. Sixty cadets boarding in the school from September to December, 1898, showed an average gain of 15 pounds in weight and nearly 1 inch in stature. During the same months in 1899, even better growth was obtained. All cadets, upon entrance, are carefully examined by the surgeon of the New Mexico Military Institute, and measurements carefully recorded. It is therefore impossible for latent diseases to escape prompt attention.

Special pains are taken to give plenty of good, wholesome food, clean, comfortable quarters, and as good a living as can be found at any school of the kind in the world.

The superintendent, instructors, and their families are required to live at the institute, and take their meals in the mess hall with the cadets. The mess hall seats 70 people at the tables and is completely furnished. The kitchen and laundry outfits are the best of their class, and easily feed and care for 100 people daily.

BUILDINGS AND FURNISHINGS.

The total amount expended for fixtures and furnishings somewhat exceeds $35,000. The institute barracks are of brick, trimmed with red sandstone, three stories, with gray stone basement, the four floors all lighted by gas, heated by steam, with hot and cold water on every floor, perfect fire apparatus throughout the building, lavatories and baths, modern water-closets, and a complete system of waterworks and sewerage. The regents, during 1899, built and furnished, in addition, an excellent ten-room dormitory and a five-room residence.

The schoolrooms and section rooms are on the first floor and are furnished with best adjustable chair desks and folding seats.

The furnishings of the cadets' bedrooms are substantial and well adapted to their needs. Each student has a first-class (iron) bedstead, mattress, and pillow; each room two beds, a table, chairs; washstand, etc. There are no large dormitories, where several dozen sleep and live together; two students are put into a room. There are 30 bedrooms in the main building, 10 in the larger cottage, and 5 in the residence proper, affording lodging for the instructors, domestics, and 75 cadets.

No expense has been spared to make everything thoroughly good, substantial, and comfortable. Few hotels can afford more genuine comfort. The grounds embrace 40 acres of level land.

Besides the barracks and residence buildings within the 10-acre inclosure are the power house, gas house, a large 10,000-gallon tank, the 6-acre parade ground, and ample space for exercise and recreation. The grounds have been planted with trees and set in Bermuda grass.

COURSE OF STUDY.

Experience has demonstrated that at present four preparatory classes are necessary in addition to the four usual collegiate classes. Cadets holding county appointments must be able to enter the fourth or lowest collegiate class, for it is not usual that an appointee will hold his commission longer than four years, and it is to the interest of all concerned that the appointee should finish the entire course to graduation.

In order to enter the fourth class, the applicant must have a fair knowledge of English grammar, arithmetic, United States history, geography, some knowledge of algebra, and should be able to read aloud intelligently and spell correctly.

Other students will take such classes as they may be prepared for, but all county appointees must enter at the fourth class.

The preparatory classes are for the present maintained especially for the benefit of young boys or poorly advanced students old enough to do sometimes two classes within a single year. After a few years they will be abolished and all students must be able to take the fourth class.

The entire course of study is as follows:

PREPARATORY CLASSES.

Class A.—Spelling, reading, geography, language lessons, arithmetic, writing.

Class B.—English grammar, spelling, reading, arithmetic, geography, United States history, writing.

Class C.—English grammar, reading, spelling, United States history, arithmetic, physical geography, writing.

Class D.—English grammar, arithmetic, spelling, algebra, general history, physiology.

Collegiate classes.

FOURTH CLASS.

First term.	Second term.	Third term.	Times a week.
Algebra	Algebra	Algebra	5
	Geometry	Geometry	5
Rhetoric	Rhetoric	Rhetoric	3
English history	English history	English history	3
Spanish	Spanish	Spanish	5
Latin	Latin	Latin	5
Drawing	Drawing	Drawing	3

THIRD CLASS.

	Geometry	Trigonometry	3
Geometry	English literature	English literature	5
English literature	Spanish	Spanish	5
Spanish	Latin	Latin	5
Latin			5
	Trigonometry	Surveying	3
Drawing	Drawing	Drawing	3

SECOND CLASS.

Analytical geometry	Analytical geometry	Analytical geometry	5
Spanish	Spanish	Spanish	3
German	German	German	3
Latin	Latin	Latin	3
Physics	Physics	Physics	3
Tactics	Tactics	Tactics	5

FIRST CLASS.

Calculus	Calculus	Calculus	5
Astronomy	Astronomy	Spanish history	3
Geology	Geology	Geology	5
Chemistry	Chemistry	Chemistry	5
German	German	German	3

MILITARY SYSTEM.

One of the greatest educators of our country declares: "A distinctive military system tends to muscular development and physical health by an enforced regularity in food, sleep, and exercise. It creates habits of promptitude, order, discipline, and subordination. It fosters self-reliance and force of personal character by removing all extraneous distinctions and by casting each youth, whatever his antecedent circumstances, on his own individual responsibility. It is equal, uniform, and wholesomely restraining, without rigor." This has been the verdict of history. The best teachers of the country favor it as conducing to better discipline, better work, better health, and better citizenship. In preparatory schools of every order it is in some form always desirable. In the busy West, with its imperfect system of secondary schools, it is almost indispensable in securing best results.

Governments, corporations, and individuals are unanimous in expressing a preference for young men who have received such training, and under present political and industrial conditions there is a stronger demand for such training than ever before in the country's history.

The far-reaching effects of the present national policy are likely to have no parallel, unless it be the British Government in India.

For this cause the New Mexico Military Institute lays especial stress upon military training and a perfect mastery of the Spanish language, designing to fit young men for that peculiar form of civil life upon which it would seem probable that large numbers would shortly enter—men who know thoroughly the two languages of the Western Hemisphere, able to become soldiers within a few hours, trained to systematic habits and business methods, educated sufficiently well to manage any form of business intrusted to them, and morally reliable as well as intellectually and physically competent.

While, for the present, the enforcement of really burdensome military requirements will not be attempted, the fact must never be ignored that this is primarily a military school. There is nothing in which young boys may not pleasurably and profitably participate. At the same time a regular commandant will reside in the barracks and have charge of them day and night. Frequent inspections are made by the commandant in person, and the usual military discipline rigidly enforced. The school has 80 Springfield rifles and accouterments, and ample facilities for target practice and firing exercises. At least one hour daily, six days in the week, is devoted exclusively to military exercises on the parade ground, and on Sunday the cadets must parade for inspection and march to church.

Daily routine.—Reveille, 6.20 a. m.; room inspection, 6.50 a. m.; breakfast, 7 a. m.; study call, 8 a. m.; first dinner call, 12 m.; dinner, 12.10 p. m.; study call, 12.40 p. m.; first drill call, 4.50 p. m.; drill, 5 p. m.; supper, 6.10 p. m.; study hall, 7 p. m.; tattoo, 9 p. m.; taps, 9.30 p. m. Saturday: Battalion inspection, 9.30 a. m.; battalion parade, 5.30 p. m. Sunday: Church, 10.30 a. m.

ATHLETIC EXERCISES.

The conception of a soldier who is not reasonably able-bodied or is physically a coward is almost absurd. Vigor, endurance, hardihood, and courage are essential factors in his life and training.

While cadets are not permitted to neglect either their studies or their military duties for games, sports, and recreative exercises, they are encouraged to so spend all their leisure time. It is nearly as important to keep busy as to become strong. Certain exercises are compulsory. All cadets must box and fence under the regular instructors. The instructors are employed to coach the football, baseball, and tennis teams, for which excellent provision is made. Regular instruction is also given in wrestling, tumbling, running, throwing, jumping, and vaulting.

During session 1899–1900 the cadets had a strong track team and an excellent baseball team. Both made the best records of the year among Southwestern schools. Athletic exercises not only tend to make vigorous, robust, and self-reliant men, but perhaps nothing so powerfully conduces to create an enthusiastic college spirit.

North Spring River, less than half a mile distant, affords good swimming and rowing. People have bathed daily for years in this warm spring water—winter and summer; there are not ten days in the year when all sorts of gymnastic exercises would not be possible in the open air.

Owing to the abundance of vigorous exercise, sound food, clean baths and quarters, busy life, and wholesome restraint, the health of the cadets is superb. The effects are noticeable upon boys of all ages, the strongest and the weakest.

Great care is taken as to sanitary arrangements and the health of cadets. A regular surgeon is employed and a regular hospital maintained, for it is important, not only to take care of the sick, but to train nurses. Whenever a boy is unfit for duty or reported ill, he is sent to the hospital and put under the school physician. It is thus impossible for him to feign illness on the one hand or suffer neglect on the other.

Track team.—Capt. W. E. Davis, manager; W. D. Mangam, coach; Cadet P. D. Headrick, Cadet M. L. Kelley, Cadet Marvin Livingstone, Cadet Edwin Bowie, Cadet R. B. Seay, Cadet J. W. Chaves, Cadet A. N. Garrett, Cadet Homer Vivian, Cadet Peter Frank, Cadet Walter Daugherty, Cadet Thomas Crumpacker.

Baseball team.—Capt. W. E. Davis, manager; Charles McDonald, coach; Cadet P. D. Headrick, catcher and captain; Cadet H. W. S. Otero, p.; Cadet Albert Sisk, 1 b.; Cadet Alfonso Romero, 2 b.; Cadet Walter Daugherty, 3 b.; Cadet L. F. Jones, s. s.; Cadet Jack Cowden, r. f.; Cadet Leo Wattelet, c. f.; Cadet Thomas Crumpacker, l. f.; Cadet Homer Vivian, Cadet Edwin Bowie, Cadet Peter Frank, Cadet Asa Draper.

SOCIAL AND RELIGIOUS INFLUENCES.

At stated periods, with permission of the regents, the cadets are allowed to entertain the public in barracks.

Parents and guardians are permitted to pay short visits to their wards at the institute, in which case they are the guests of the superintendent.

Cadets will not be allowed to visit Roswell, or leave the inclosed limits for any cause whatever, except by special permission of the superintendent, nor may such permission be granted, save at stated hours in the afternoon.

On Sundays cadets must attend the church designated by their parents. If there is no such denomination in Roswell, the cadet may attend any church he desires. If neither he nor his parents desire him to attend any church in Roswell, he must march to town on Sundays with the battalion and return under command of the officer detailed for the purpose.

Cadets will be allowed to attend any designated Sunday school upon the written request of parents, but will not be allowed to attend services at night.

The New Mexico Military Institute is the property of the Territory, built and maintained by the people. It has nothing to do with political parties or religious denominations. While the general moral welfare of the cadets is looked after, it is both unjust and unwise to risk bringing the school under political or sectarian influences, however good in themselves, because in such matters the best people differ very widely, and the institute belongs to the whole people.

COUNTY APPOINTMENTS.

Under the act of 1895, "each county in the Territory may, through its county commissioners, by competitive examination, or in some other manner to be determined by such commissioners, appoint one student annually, who shall, without any charge for matriculation or tuition, receive, during the year for which such student shall have been so appointed, instruction in the regular courses taught in said institute."

Cadets holding these appointments receive free of charge their tuition, board, room, and furniture. They must buy their uniforms, books, and wearing apparel, and, like other cadets, furnish their own napkins, towels, bedding, etc. Upon entrance they must deposit with the treasurer of the board of regents, $25 for laundry, $10 for the surgeon, $5 for breakage, and $10 for incidentals—a total of $50.

The appointee must be free from disease or serious physical blemish and of good moral character.

Entrance examinations will be held in the study hall of the New Mexico Military Institute at the opening of each session, and will be set to appointees and alternates who present their certificates from county commissioners.

Commissioners should always name at least one alternate who may take the place of their appointee in case of his failure, resignation, death, or expulsion for misconduct.

Commissioners must notify the regents of appointments on or before July 15 of each year.

NECESSARY EXPENSES.

The necessary expenses of a cadet not holding a county appointment at New Mexico Military Institute from September to June are as follows:

Tuition and maintenance	$200.00
One suit uniform, $7 to	19.00
Books and stationery	6.00
Clothing, bedding, and spending money	25.00
Total	250.00

Maintenance includes board, lodging, laundry, and medical attendance and all fees due the New Mexico Military Institute for the entire session of three terms.

The sum of $200 is payable upon entrance. A student who enters for less than the entire session must pay at the rate of $250 per session.

No student will be received for a shorter period than a half session, and in case a student is entered for a half session only the sum of $125 must be paid at entrance.

It is best that each boy should have two suits of uniform his first year; thereafter one suit and an extra pair of trousers should suffice. A large number of cadets get through their first year on one suit and an extra pair of trousers.

The uniform is the braided West Point fatigue suit, gray blouse and trousers, and blue cap. The best costs the cadet $19 for coat, trousers, and cap.

Two pairs of good shoes should suffice for the session.

REQUISITES.

Each cadet should bring from home or buy in Roswell the following articles: Four sheets for single bed, 3 pillow cases, 1 pair heavy blankets, 1 comforter, two clothes bags, 6 towels, 6 napkins, 6 handkerchiefs, 6 white standing collars, 4 soft colored shirts, 2 suits underclothing, 4 pairs socks, 1 brush and comb, 1 tooth brush, 1 clothes brush, 1 blacking brush and blacking, 1 napkin ring, toilet soap, matches.

All articles must be marked with owner's name. Garments to be laundered must be marked with indelible ink on outside. Full name of owner must be written—initials or abbreviations will not suffice. Cadets will not be allowed over fifteen pieces of laundry each per week. No unmarked clothes will be received for laundry. The laundry is now done by a steam plant in Roswell.

SPENDING MONEY.

No cadet should be allowed over $1 per week, and 25 cents per week is enough for young boys. It is best to send spending money to boys monthly in form of a regular allowance.

Shoes, wearing apparel, and necessaries should be sent from home or the money for them sent to the superintendent in the form of a check or post-office order, made payable to the boy's order, and he should be required in every case to send a receipted bill of the articles. But articles will not be bought for students until money for them is sent. Parents are advised to pay no bills made by cadets in town without their written authority, and merchants are warned to give no credit to cadets without such authority. Neither the school nor its officers can undertake to collect bills for merchants or pay them for students.

A deposit of $25 should be made upon entrance for uniform and necessary text-books. The school provides neither uniforms nor books. Swords and regalia of cadet officers must be paid for by the owners. When a parent is in doubt about the advisability of sending a boy money, it is best to write to the superintendent.

The officers of the institute are forbidden to lend money to cadets or buy goods for them on credit, even at request of parents. It has been found injurious to the school. Parents must send money in advance for clothing, books, and necessaries.

EXAMINATIONS AND REPORTS.

Students are carefully graded on each recitation; at the end of each month an average is made of the recitation marks. At the end of each three months a written examination is held, and this examination is counted as a fourth month. Reports are sent to parents and guardians after each examination and the percentage recorded on each report is one-fourth the sum of the three monthly averages and the examination mark. The number of demerits indicates the conduct of the cadet. Any cadet who receives as many as one hundred demerits must be withdrawn.

HOW TO REACH ROSWELL.

Students coming overland from the interior should come by private conveyance or stage from Lincoln or Fort Sumner. Coming by rail, they should take the Pecos Valley and Northeastern Railway at Pecos on the south, and Amarillo, Tex., on the north; in either case they will reach Roswell in the daytime and should come straight from the depot to the institute. Students must report to the superintendent within four hours after arrival in Roswell.

MILITARY INSTITUTE AT ROSWELL AND ITS RECORD.

As there seems little doubt but the Pecos Valley road will shortly build its extension from Roswell to El Paso, it is worth while to note the phenomenal rise of New Mexico's school of arms located there.

Never in the history of Western education has any school attained within so short a while such well-earned reputation. Founded only two years ago, it is to-day unquestionably the strongest boys' training school in the Southwest. Last session it was simply first among the first in everything. Its students not only learned books, and really went to school, but did everything else equally well. The New Mexico Military Institute ball teams and track teams were the best in the whole West; the military work receives high compliments from every army man; the commissary is praised by the best hotel men.

Truly, it is a remarkable piece of organization and management. New Mexico has made serious mistakes with most of her Territorial institutions; most of them have been models of impractical theories and of incompetent management. But the military institute at Roswell is the proud exception. The school has been fortunate in having a body of regents who were at once honest men and business men. They had more good fortune in their choice of a superintendent. Colonel Meadors is a man of affairs. He is a good scholar and a ready writer, a fluent speaker, and very energetic. It is doubtful if the West holds his equal as a school canvasser.

He knows printer's ink as few men do; his little circulars, etc., are perfect gems of concise business English. His photograph outfits are delightfully original and very effective. He is a fine mixer, and has by far the largest acquaintance of any of the schoolmen. The result is that the New Mexico Military Institute is getting students from Minnesota to Mexico and from Dallas to San Francisco. It is the only school in the Southwest not chiefly supported by local patronage; several towns in western Texas each send more students than Roswell.

But the school itself is well worthy of a good canvasser. The management of all departments exhibits the same energetic and business-like methods. There is an earnestness of purpose and an honesty of action about the New Mexico Military Institute that commends it to all classes of people; the school grows every day in public esteem, and has a strong future.

Its location could not be surpassed; the climate is almost perfect; all appointments and equipments are strictly modern and the very best. The fees, $200 per year, are lower than at any school of the kind in the Union. The six instructors are all graduates, and honor men at that, of the very best colleges in America and Europe; and one familiar with the history of Western education, and especially New Mexico schools, finds himself astonished at discovering what this school has accomplished with the money at its command.

The school is a credit to New Mexico, and well worthy of the liberal patronage it is receiving from all parts of the country.

NEW MEXICO SCHOOL OF MINES.

SOCORRO, N. MEX., *September 1, 1900.*

DEAR SIR: In compliance with your request, I hereby submit my annual report of the New Mexico School of Mines, to wit:

The New Mexico School of Mines is a Territorial institution, founded by the Territorial legislature in 1889.

The act creating it provides that the school of mines shall be supported by an annual tax of one-fifth of a mill on all taxable property within the Territory. This levy was increased by the Territorial legislature in 1889 to twenty-seven and one-half hundredths of a mill.

The legislature located the school of mines at Socorro, the county seat of Socorro County. Its campus consists of 20 acres of level meadow land, within the irrigable district, 1 mile west of the Rio Grande and 1 mile northwest of the railroad station. The laboratory building is situated nearly in the center of these grounds.

Socorro, a city of about 4,000 inhabitants, is on the western slope of the Rio Grande and on the main line of the Atchison, Topeka and Santa Fe Railway, about 75 miles south of Albuquerque and 180 miles north of El Paso, Tex. It is at an elevation of about 4,500 feet above sea level, and, having a salubrious climate, is pre-eminently a pleasant and healthy location. Socorro is an attractive city for health seekers from the East who need a mild and dry climate; every year many persons seek its hospitalities. In the city are two hotels, several good boarding houses, two large public school buildings, and a court-house that cost $45,000. Mount Carmel Convent and a mission school and a representation of nearly all the church denominations are other features of Socorro.

Socorro has one of the best public waterworks in the Territory, furnishing a very soft, pure, and healthful water. The supply comes from hot springs that issue from the base of the Socorro Mountains, about 4 miles west of the city. Two weekly papers are published here. There are also a brewery, artificial ice plant, roller-process flouring mill, and a fire-clay works, which manufactures the best fire-clay and building bricks in the Southwest.

The pure air and water, cool mornings and evenings, high elevation, and absolute freedom from malarial influences are some of the climatic conditions with which Socorro is favored, and which are essential for thorough and systematic study. Living expenses here are as low as in any other city in the West. While some of the schools of mines in the East charge $200 or more per year for tuition, this institution only charges its students the nominal tuition fee for materials consumed.

The New Mexico School of Mines enjoys the natural advantages of being located in the midst of a region peculiarly rich in minerals of nearly all kinds, and is within easy reach of the most varied geological conditions, all of which are within a radius of 20 miles of Socorro.

Almost the entire geological column, from the precious metal bearing formations of the Archæan to the coal beds of the Tertiary, is here exposed. The industrial processes connected with mining and metallurgy may also be seen at Magdalena, Kelly, San Pedro, Hillsboro, Cooks Peak, Silver City, Los Cerrillos, Gallup, Carthage, and elsewhere within easy reach of the school. These illustrate the most modern methods of mining, milling, ore dressing, concentrating, smelting, lixiviation, cyaniding, etc., as well as the native Mexican processes, which are worthy of a careful study, since the like can not be seen elsewhere in the United States.

The grounds immediately adjacent to the school of mines include open plains, plateaus, and mountain formations, all affording an excellent field for practice in surveying, laying out of railroads and irrigating canals, topography, geology and mine engineering. Hence, students may be prepared at the very doors of the school in actual practice in these branches, which usually require tedious and expensive excursions from Eastern schools of mines.

The field for original scientific research in New Mexico is unrivaled by any other mining section, and the opportunities here offered are not neglected in the plan and scope of instruction. It is proposed that much of the advanced professional work of the school shall be of an original nature, to the end that the graduates may be skilled theoretically and practically in the very problems which they, as professional men, will be called upon to solve.

During the session of 1899–1900 there were employed in the school of mines 2 professors and 3 instructors. There were 48 pupils in attendance. Of these 32 were males and 16 were females. Of the males 5 were natives of the Territory. There were 9 pupils from outside of the Territory of New Mexico. Twenty-three per cent of the entire attendance were in the technical departments of the school.

There were 3 graduates in the preparatory department and 5 graduates in special courses of assaying, etc. No graduates of full degrees.

The school is now in a healthy condition, and the coming session has every indication of being the most prosperous one in the history of the institution.

The following is a statement of the receipts and disbursements of the New Mexico School of Mines, as furnished by Mr. C. T. Brown, secretary of the board of trustees, to wit:

July 1, 1899, to balance		$334.86
Received from Territory		8,459.14
Received from laboratory supplies		390.07
Received from tuition		273.50
Received from assaying		274.25
Total receipts		9,731.82
Disbursements:		
Salaries	$5,103.26	
Incidentals	1,780.50	
Supplies	458.02	
		7,341.78
Balance July 1, 1900		2,390.04

The friends of the school are now hopeful that it is soon to receive such Federal aid as will make it possible to place the institution on a much higher plane of usefulness than is possible under present conditions. The first session of the Fifty-sixth Congress took the preliminary steps toward extending to the mining industry the same aid that is now extended to that of agriculture.

Several bills were introduced, all having the same object, that of giving Federal aid to stimulate and promote scientific research in the various branches of mining and metallurgy. The friends of these bills finally united upon one introduced by

Senator Tillman, which passed the Senate without a dissenting vote and was reported upon favorably by the committee to which it was referred in the House.

All friends of the measure feel warranted in believing that this bill will become a law at the adjourned session of the present Congress in December. The Tillman bill provides for an annual appropriation to schools and departments of mining and metallurgy, beginning with $10,000 and increasing by $1,000 each year until $15,000 is reached, at which sum the appropriation is to remain a permanent fund.

The healthy inquiry now coming to the New Mexico School of Mines concerning the various mines and districts of the Territory, by its citizens and Eastern capitalists is conclusive evidence that the public have every confidence in the school and that all regard the same as the most reliable authority which can be obtained in the Territory.

Respectfully submitted.

F. A. JONES, *Director*.

Hon. MIGUEL A. OTERO,
Governor, Santa Fe, N. Mex.

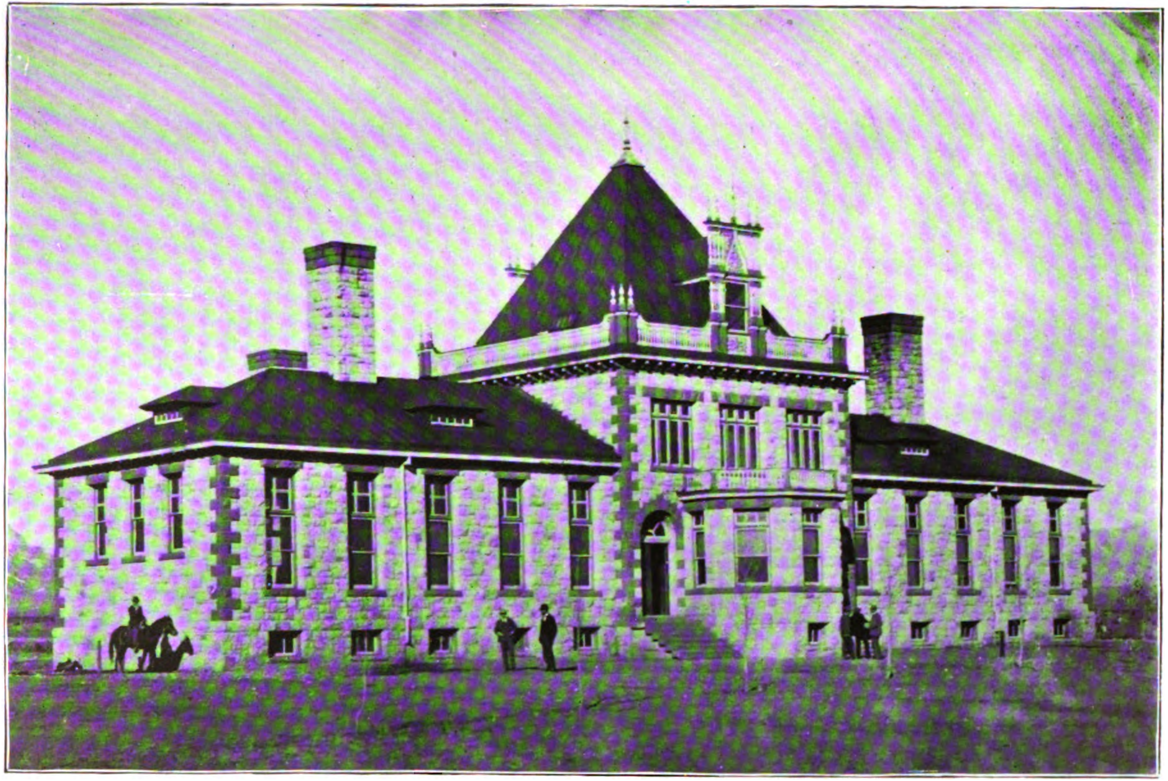
THE SCHOOL OF MINES.

The New Mexico School of Mines is a Territorial institution, founded by the Territorial legislature in 1889. Several of the States of the Union, far less bountifully blessed in the line of minerals than New Mexico is, early recognized the advantages that would accrue from institutions of this class and made haste to establish such institutions, and have since given them a liberal support. Long before 1889 New Mexico was known to be exceedingly rich in mineral resources. It did not require, therefore, great insight to recognize the importance of establishing within the Territory a school in which should be taught the most scientific methods of mining and treating such ores as were known to exist in abundance, and such other ores as would doubtless be discovered later. The wisdom of the Territorial legislature in establishing such a school has been amply vindicated.

Object of the school.—The object of the institution is set forth specifically in section 28 of the act creating it, as follows: "The object of the school of mines created, established, and located by this act is to furnish facilities for the education of such persons as may desire to receive instruction in chemistry, metallurgy, mineralogy, geology, mining, milling, engineering, mathematics, mechanics, drawing, the fundamental laws of the United States, and the rights and duties of citizenship, and such other courses of study, not including agriculture, as may be prescribed by the board of trustees." The scope of the work thus prescribed is broad enough to include all means necessary to the attainment of the object of the school. On account, however, of circumstances connected with the public-school system of the Territory, a later legislature found it necessary to provide for a preparatory course by which students could be fitted for the technical work of the institution. Such a course has since been maintained.

Supported by the Territory.—The creating act provides that the School of Mines shall be supported by an annual tax of one-fifth of a mill on all taxable property within the Territory. It was thought that this levy would give the institution an income of about $10,000 a year, but it was not until 1893 that a special appropriation was made for a suitable building to enable the school to be organized in accordance with the policy of this act, and the great financial panic of that year so reduced the assessed valuation of property within the Territory that the school's income was reduced to only about one-half of the amount anticipated. However, the last Territorial legislature generously and wisely increased the levy for this purpose to twenty-seven and one-half one-hundredths of a mill.

Federal aid expected.—The friends of the school are now hopeful that it is soon to receive such Federal aid as will make it possible to place the institution on a much higher plane of usefulness than is possible under present conditions. The first session of the Fifty-sixth Congress took the preliminary steps toward extending to the mining industry the same aid that is extended to that of agriculture. Several bills were introduced, all having the same object, that of giving Federal aid to stimulate and promote scientific research in the various branches of mining and metallurgy. The friends of these several bills finally united upon one introduced by Senator Tillman, which passed the Senate without a dissenting vote and was reported upon favorably by the committee to which it was referred in the House. All friends of the measure feel warranted in believing that this bill will become a law at the adjourned session of the present Congress in December. The Tillman bill provides for an annual appropriation to schools and departments of mining and metallurgy, beginning with $10,000 and increasing by $1,000 each year until $15,000 is reached, at which sum the appropriation is to remain a permanent fund.



New Mexico School of Mines at Socorro.

Location of the school.—The school of mines is located at Socorro, the county seat of Socorro County. Its campus consists of 20 acres of level land about a mile and a half northwest of the railroad station. The laboratory building is near the center of these grounds.

The city of Socorro.—Socorro is a city of about 4,000 inhabitants, situated about a mile west of the Rio Grande, on the main line of the Atchison, Topeka and Santa Fe railroad, 75 miles south of Albuquerque and 175 miles north of El Paso. It has an elevation of 4,600 feet above sea level. The climate is mild and dry and exceedingly healthful. The water supply comes from a warm spring that issues from the base of a mountain about four miles west of the city. A careful chemical analysis has shown this water to be exceptionally pure and wholesome.

A good location.—In addition to climatic attractions the School of Mines enjoys the natural advantage of being located in a region peculiarly rich in minerals of nearly all kinds. It is also within easy reach of the most varied geological conditions. The industrial processes connected with mining and metallurgy may be seen at Magdalena, Kelly, Hillsboro, Cooks Peak, Silver City, Pinos Altos, Rosedale, in the Black Range, and at other places not difficult of access from Socorro. In these camps may be seen illustrated the latest methods of mining, milling, concentrating, smelting, chlorination, etc., as well as the native Mexican methods, which are worthy of a careful study, since the like can not be seen elsewhere in the United States.

Original researches.—The field for original scientific research in New Mexico is unrivaled by that of any other mining section. The opportunities thus offered are not neglected in the plan and scope of instruction at the School of Mines. It is designed that much of the advanced professional work of the school shall be of an original nature to the end that graduates may be skilled theoretically and practically in the very problems which they, as professional men, will be called upon to solve. While this plan of instruction is designed to furnish material for practical and original research on the part of advanced students, it is believed that it will also be of great practical utility to the industries of the Territory, and that in an important sense the school shall have for its students not only those who may study within its walls, but also the greater part of the mining population of New Mexico.

The laboratory.—The plans and specifications of the laboratory represent the most modern requirements of a technical school, as developed by the Massachusetts Institute of Technology, the Columbia College school of mines, and other similar institutions. The building is 135 feet long by 32 feet deep, with a central rear assay wing 32 feet wide by 54 feet long. It is a one-story building of gray trachyte, trimmed with red sandstone; has a basement complete, and a central pavilion three stories high; is well ventilated throughout, and has all modern conveniences. The entire building is finished in oiled hard pine, except the assay rooms, which are finished in fire-proof material. The completed structure cost $43,940.43.

Interior arrangement.—The main floor contains the office, private laboratory, qualitative and quantitative laboratories, balance room, evaporation room, stock room, and laboratories for fire and wet assaying. The qualitative and quantitative rooms are supplied with convenient working desks, each of which is supplied with water and gas. The balance room is supplied with quantitative assay and ore balances of Becker's finest construction; the fire assay room is complete in every respect; the library and reading room is provided with standard works of reference, and the engineering department is equipped with a full set of instruments for field work.

A complete course.—The School of Mines offers a complete technical course, extending through a period of four years, in each of the following departments, viz: Chemistry and metallurgy, mining engineering, and civil engineering. For the benefit of those who are unable to complete a full course, short special courses also are offered in assaying, prospecting, and surveying. These courses have much to commend them, and many young men of the Territory have availed themselves of the opportunity to complete one of them in one session. The preparatory course is designed primarily to fit students for the technical courses, but it offers besides considerable other work of such a character as is commonly done in high schools.

Expenses are moderate.—The expenses connected with attendance at the School of Mines are moderate. A tuition fee of $5 a session is charged for preparatory students, $10 a session for technical students, payable at the time of matriculation. Good board can be had at from $15 to $20 a month. Students can maintain themselves on $200 a year if they are willing to economize.

A gold medal.—As an inducement to special effort, Mr. C. T. Brown, of Socorro, secretary and treasurer of the board of trustees, offers a gold medal to the student showing the greatest proficiency in assaying, chemistry, and metallurgy during a full year's work. This medal was awarded last year to Carl J. Homme, of Wittenberg, Wis.

A flourishing institution.—The New Mexico School of Mines is in a flourishing condition, and doing valuable work for the Territory. The attendance last year was large, and a still larger attendance is assured for the coming year. Of the several graduates last spring in special courses, all but two or three, who are expecting to to pursue their studies further next year, have responsible and desirable positions with mining companies. The improved scientific methods that are now so generally employed in mining operations, and the widespread attention that is given to mining industries, have created a great and lasting demand at good salaries for young men with a technical knowledge of mining and metallurgy. It is not unreasonable to expect that with the Federal aid which is anticipated the School of Mines is soon to become not only the chief agency in the education of the young men of New Mexico, but also the most potent factor in the development of the greatest industry of this great Territory.

NEW MEXICO NORMAL UNIVERSITY.

LAS VEGAS, *June 27, 1900*

Hon. MIGUEL A. OTERO,
Governor of New Mexico:

Pursuant to your instructions, I beg leave to submit the following report of the New Mexico Normal University for the year ending July 1, 1900:

This institution has just completed its second year's work, having opened its doors October 3, 1898. The annual catalogue, a copy of which is herewith transmitted to you, shows an enrollment of 203 students in the normal university proper, 39 in the kindergarten, and the enrollment in the model schools connected with the normal school is not counted. The attendance at present exceeds that of many Eastern normal schools. It is worthy of especial mention that ten States are represented in the enrollment for this year, a fact which indicates that the educational institutions of New Mexico may expect a large patronage from Eastern States as soon as they offer a high grade of instruction and ample facilities for advanced work.

The future of this institution was assured by the farseeing policy of the regents, who have been charged with its affairs from the beginning. It is located in the center of one of the most enterprising little cities in the West, making it easy of access and insuring it a strong local support. The community in which the school is located is one that fully appreciates the value and influence of such an institution, and shows that appreciation in most substantial ways. The climate is ideal for study all the year round. There is no institution in America more fortunately located in that respect. Great wisdom was also shown in the planning and construction of the building, a cut of which is herewith furnished you. It is a massive sandstone structure, built throughout alike for architectural beauty, durability, and convenience. The first floor furnishes ample accommodations for a model school of 200 children, the manual training department, heating plant, and janitor's quarters. The second floor accommodates the library, departments of pedagogy, psychology, sociology, and art, recitation rooms, offices, and retiring room. The third floor contains the assembly room, with seating capacity of 400, laboratories for biological and physical sciences, and rooms for departments of history, literature, languages, and mathematics. The fourth floor contains the museum and physical culture room, with closets for the storage of apparatus and collections.

In choosing the faculty the management has from the beginning sought to insure a high standard by selecting men and women from the best educational institutions of the land. This policy brings New Mexico into direct touch with the best educational thought of the times, and enables our young people to procure at home the advantages which formerly they were compelled to seek at great expense abroad.

The scope of the institution has been determined by the various legislative acts pertaining to it and the manifest needs of the people of New Mexico. It is embraced in the following departments:

1. *The normal school.*—This is the central feature of the organization. Its purpose is to educate teachers for the public school service. The problems of primary and secondary education in New Mexico are unique in many respects. To deal with these problems is the special province of the normal school. The proposition has been laid down and generally accepted that "the function of the normal school is to educate teachers for the schools of the State. The State supports the public schools for the education of its children. It supports the normal school that its children may have better teachers." Accordingly, the work of the normal school has been planned to meet our peculiar conditions. The regular course is a course of two years above the high school. It is strictly a professional course of the highest grade adopted by any normal school in the United States, and leads to a life certificate to

teach in any of the public schools of New Mexico. It is intended for those who are to serve as grade teachers in town and city schools. The elementary course is a training course in the common branches, designed especially for those who are to teach in rural schools. It embraces two years' work, but is so planned that country teachers may come in for a term or more and receive considerable benefit. It should be especially noted that in connection with the normal school a system of model schools is maintained, consisting of classes of children of all grades from kindergarten to high school, and taught by the most expert teachers that can be secured. This furnishes a pattern school, after which the schools of the Territory may be modeled as to organization, methods of instruction, etc., since it is based upon the most approved systems in use in the States. It is held that good health is more important in the teachers' profession than in almost any other. Consequently, no student will be considered a candidate for graduation from the normal or post-graduate courses who is affected with any deformities that are unsightly or detrimental to the daily work of the teacher, serious defects of sight, hearing, or speech, any transmissable disease, or any serious nervous or organic disorder.

2. *The graduate school.*—This consists of a two years' course of professional training above the regular normal course, thus furnishing to those who take both courses four years of professional training of university grade. It is intended especially for critic teachers, principals, and superintendents.

3. *The academic school.*—This department is devoted to general education. It is a four years' course above grammar grade and is equivalent to the preparatory courses offered by the best schools of the country. It comprises English, classical, Latin, scientific, commercial, and manual training courses. These are designed to be good finishing courses for those who will go no further, and good preparatory courses for those who wish to continue their studies in normal school, university, or technical and professional schools. The work of this department is placed upon a high standard, for the reason that it forms the basis for whatever the student is to do in the future, either in pursuing studies in higher institutions or in the work of life outside of schools.

4. *The manual training school.*—This department was established this year pursuant to the act of the thirty-third legislative assembly creating it as a branch of the New Mexico Normal University. It is designed to carry out the provisions of that law, which provides that the object of the manual training school shall be to instruct pupils and prepare teachers to teach the use of hand and tools in the various arts of practical value to the people of the Territory. A large number of pupils have already availed themselves of the manual training courses, and much good is to be expected from the introduction of this line of education among all classes of our people. The value of hand work in the development of mind and character has come to be almost universally recognized.

I wish particularly to call your attention to the fact that the standards of work and scholarship set for every department of this institution are equal to the highest set for similar departments in the best schools of the United States, and that those standards are scrupulously adhered to. It is felt that no other policy would in the end be acceptable to the people of New Mexico. A great responsibility rests upon the management of a normal school because of its relation to the whole public school system of the State. Its relation to the kindergarten, primary grammar, and high schools is such that all its influence and power must be used for their improvement. It exists for the public schools and the children who attend them. It must set the standards for primary and secondary education and send out teachers that can raise the schools up to those standards. It must also cooperate to the fullest extent with the university and other higher institutions in promoting higher education. The New Mexico Normal University is working toward those ends as rapidly as its means will permit.

The president wishes to express his grateful appreciation of the hearty cooperation of the legislative assembly, board of regents, faculty, student body, and community, and also of your administration in the upbuilding of this institution.

Respectfully submitted.

EDGAR L. HEWETT, *President.*

NORMAL SCHOOL OF NEW MEXICO.

SILVER CITY, N. MEX., *May 20, 1900.*

MY DEAR SIR: In obedience to your request, I herewith submit a report of the Normal School of New Mexico, giving a brief account of its history, its work, and its condition.

The school is just closing the sixth year of its existence, and therefore has had time to accomplish somewhat the aim for which it was established. Its normal department was created at the beginning, and has continued to become more and more professional in its character. The enrollment has increased from about 35 the first year to 88, the enrollment this year.

While the school has been and is a great convenience for Silver City, the surrounding sections have been largely represented in the attendance. At least 40 per cent are non-residents, and 65 per cent of those graduated have been from abroad. Seventy per cent of those who have graduated taught in the schools after their graduation.

In order to conform to the conditions in this new country the school, like other institutions of its kind in the West, carries forward business and academic departments, as well as that of the professional. The professional department receives the emphasis, of course. Many of those who enter the school to pursue the academic branches only end by taking the professional course. This is shown by the list of graduates. Out of the 41 graduated thus far, but 1 has completed the academic course. It therefore is not "a high school for Silver City," but is performing well the purpose for which it was created.

Since our last report several new features have been added to the school, thus increasing its efficiency as a normal school. A training department has been organized and a competent principal placed over it. This gives pupil teachers an opportunity to be trained in the actual experience of the school. This training embraces not only work in the grades, but a course of kindergarten instruction as well. Our professional training, then, is both theoretical and practical. The former consists of a thorough course of psychology, child study, history of education, school systems, and school law, general and special methods, school economics, and educational theses, all of which require one full year's work. The latter consists of a course in primary methods and daily practice work under expert criticism.

We hold to the normal school idea of teaching the common branches, not only that the student may become more thoroughly grounded in them, but that he may know the best methods of teaching them. Indeed, every class and every department is instructed in the pedagogy peculiar to the study pursued.

The present levy is sufficient to meet the current expenses of the school by judicious management. How best to expend the special appropriation granted by the last legislature is a problem now before our board of regents to solve. The school needs more room, as well as better facilities for operation. Whatever is done will be that which is the most imperative at the time and the most consistent with the advancement of the school's interest and that of the Commonwealth which created it. Two things must be kept in mind, the demands of the present and the demands for the future. Our present needs must be served, and at the same time a firm foundation for the future must be laid. That our authorities will meet both these requirements I have no doubt.

I therefore have the honor of reporting to you that our school has been advancing in interest and all other respects this year as it has not done before, and express the hope that it will continue to do so.

Very respectfully submitted.

C. M. LIGHT, *Principal.*

Hon. M. A. OTERO,
Santa Fe, N. Mex.

A NEW MEXICO CHAUTAUQUA.

Schools, both public and private, will reopen next month for the fall and winter terms throughout the Territory. The time has arrived, therefore, for resuming the agitation for a Chautauqua, or summer school, for teachers or others, to be established preferably at Santa Fe, which offers the best summer climate of any city in New Mexico. The Colorado Chautauqua at Boulder is a great success, and so are other summer meetings of teachers in other states. In the Santa Fe Canyon a large auditorium could be built, and around it a city of tents would spring up for six or eight weeks every summer. The attractions of the upper Pecos would be near by, the cliff dwellings within a day's journey, and the historical and archæological collections at Santa Fe within near reach. Such a summer meeting would not only draw crowds from New Mexico, but from hot and sandy Kansas and Texas and even Colorado, for the double attraction of a cool, delightful summer spent amidst glorious scenic surroundings, together with a summer school led by such educators as Professors Hewett, Herrick, and others, who are making for themselves a name in the educational world, would be greater than any other Chautauqua could offer. Texas is coming to New Mexico to establish a Chautauqua at Cloudcroft, and New Mexico should be equally progressive and establish its Chautauqua at Santa Fe.

The Territorial Educational Association will meet at Santa Fe in December of this year. It meets at a time of the year when most people prefer to be at their own fireside and do not care to travel. The annual meetings that the association hold are not only interesting but important. It would be desirable therefore to draw a much larger attendance from all over the Territory than has been the case at the past meetings. The best plan would be to change the date of the meeting to July or August, and to fix the place permanently at Santa Fe, whose summer climate alone would attract many people to the meetings. Such a change would be the beginning for a New Mexico Chautauqua, which in time would become famous beyond the boundaries of the Territory.

Santa Fe should have a board of trade which would take hold of the project and would provide the means for making a start in providing Chautauqua grounds and an auditorium. It would greatly add to the prosperity and reputation of the capital city and would be an enterprise that would pay in dollars and cents. Now is the time to act.

DEAF AND DUMB ASYLUM.

SANTA FE, N. MEX., *June 30, 1900.*

SIR: Complying with your official request of the 1st instant, asking for a "full report of the condition" of the Asylum of the New Mexico Deaf and Dumb, we have the honor to submit the following:

At the time the present board took charge of the management of the asylum, April 10, 1899, the school was being conducted by Lars M. Larson as superintendent and Mrs. Lars M. Larson as matron, with an attendance of 7 Territorial pupils, under arrangements made by our predecessors; there were no funds available to pay the teachers or anything else. Our board deemed proper to allow the school to continue until the last day of May, 1899, under the contracts made by our predecessors.

From June, 1899, to the 1st of April, 1900, there was no school for want of funds. The buildings were in bad condition and in great need of repairs. There was no school stationery, such as school register, blanks for applications, reports, etc. We determined to remedy this evil by appropriating a sufficient sum of money the moment we received the first money from the Territory, which was January 31, 1900, to order the most necessary and indispensable repairs, provide the asylum with all the necessary records and stationery and other things absolutely required to save the property and insure the comfort of the employees and children. The walls were kalsomined, window shades were put in all the windows, the lumber work painted, electric light (light furnished by the penitentiary authorities, under the law) furnished, a chemical fire extinguisher placed within the building, a bathroom with two good and modern tubs was fixed up, and a good and substantial coal and wood shed built, and the superintendent furnished with a letterpress book, etc., as well as such other stationery as his office requires. All this was done without any unnecessary delay, and as soon as it was done we opened a short term of school, commencing April 1 and to continue till June 30, 1900, with 4 pupils in attendance and in charge of the same superintendent and matron. Of these 4 pupils only 1 pays for his board and washing—$10 per month; the other 3 are paupers and the Territory pays for them. Preparations are being made to have a good school at the next term, which will commence the first Monday in September, 1900.

The receipts and expenditures from all sources from April 10, 1899, to the present are as follows:

Receipts		$2,553.33
Disbursements.		
Paid Mr. and Mrs. Lars M. Larson, salary and board of pupils	$927.80	
Paid for records, stationery, postage, printing, etc	172.20	
Repairs, electric light, insurance, fuel, etc	640.15	
		1,740.15
Balance on hand		813.18

Since the school was officially established in March, 1887, the following Territorial pupils have attended: Maude Bogue, Agustina Rodriguez, Matilda Howard, Pedro Sandoval, Harry Goldsmith, N. Armijo, J. Armijo, ——— Miller, ——— Torres, ——— Weber, W. Hern, Pablo Gonzales, ——— Duran, H. Harp, ——— Blea, Annie Williams, ——— Trujillo, ——— Anderson. A. Pino, ——— Cleveland, Hugh C.

Franks, Ed Lovato, L. Sanchez, M. Morse, M. Morgan, Ghomer E. Morris, and E. Pino. Total, 27, from March, 1887, to end of present term, June 30, 1900.

The following Navajo Indians have also attended the school at the cost of the Government of the United States: J. B. Salazar, Juana Rodriguez, Angelina Casias, and Margarita Casias.

In our former report we informed your excellency of the kind and value of real and personal property belonging to the asylum, and for that reason we did not deem it advisable to again mention the same facts, unless your excellency should so desire it.

Respectfully submitted.

Mrs. T. P. Gable, *President.*
Benjamin M. Read, *Secretary.*

Hon. M. A. Otero,
Governor of New Mexico.

UNITED STATES INDIAN INDUSTRIAL SCHOOL.

Santa Fe, N. Mex., *May 14, 1900.*

Sir: In compliance with your request in your letter of the 3d instant, I respectfully transmit information concerning this school, as follows:

The Santa Fe Indian school was opened in October, 1890, with a capacity of 150 pupils, and in January, 1894, was created a normal school.

The school farm consists of 106 acres, which was donated to the Government by the citizens of Santa Fe, N. Mex. Only 10 acres, consisting of 5 acres of school campus and 5 acres of garden, are under irrigation.

There are 18 buildings, mostly of brick, well and substantially built, devoted to school purposes.

Number of months school is maintained	12
Number of instructors	32
Pupils enrolled	335
Average attendance of pupils	300
Total receipts	$57,800
Total expenditures	57,800
Value school buildings	55,093
Total amount paid to instructors	20,640

Industries taught are cooking, housekeeping, tailoring, sewing, blacksmithing, engineering, carpentering, laundering, baking, painting, nursing, and farming and gardening by irrigation.

Authorized improvements for fiscal year 1901:

For addition to school building	$6,600
For electric lights	4,500
For additional warehouse	2,000
For water and sewerage	2,000
For repairs and improvements	3,000
Total	18,100

Respectfully submitted.

C. J. Crandall, *Superintendent.*

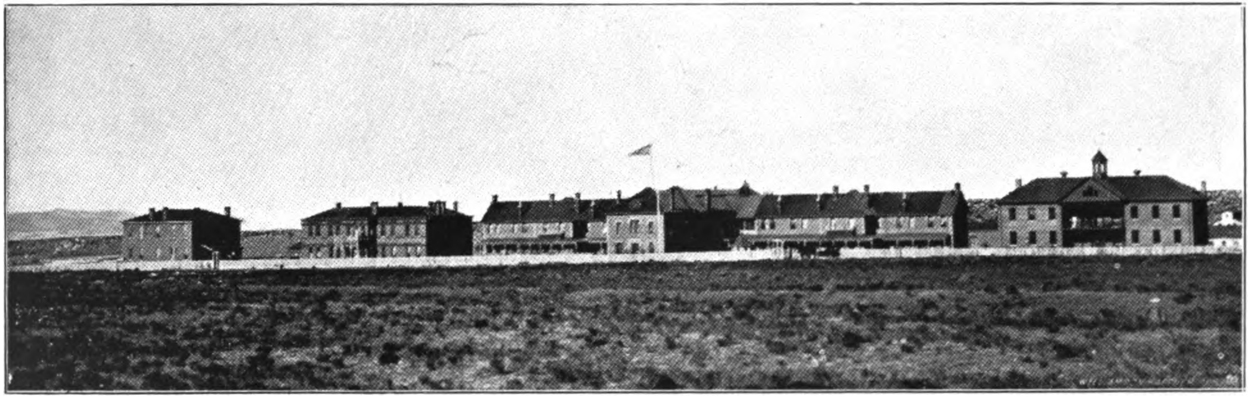
Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

MESCALERO INDIAN AGENCY AND MESCALERO BOARDING SCHOOL.

Mescalero, N. Mex., *June 30, 1900.*

Sir: I have the honor to submit herewith my annual report for the fiscal year ending June 30, 1900.

Mescalero Apache Indian Reservation contains 474,240 acres, and is situated in the northeastern corner of Otero County, N. Mex. Otero County is located in the southeastern portion of the Territory of New Mexico, and was recently formed from parts of Dona Ana, Socorro, and Lincoln counties. The agency and boarding school are located 18 miles from Tularosa, N. Mex.; our telegraph, express, and freight station on the El Paso and Northeastern Railway, 100 miles northeast of El Paso, Tex. The agency is reached from the railroad by stage or private conveyance any day except Sunday; time, four hours. We are supplied with a mail service from Tularosa, N. Mex., once daily, except Sunday.



UNITED STATES INDIAN SCHOOL AT SANTE FE, N. MEX.

The reservation lies in the Sacramento and White Mountains (Sierra Bianca), has an elevation of from 5,000 to 13,000 feet, and is composed of narrow canyons, rolling table-lands, and precipitous and rugged mountains. The higher table-lands and mountain sides are covered during the summer and fall months with an abundant growth of grass, good for pasturage, but in the winter months these lands are covered with several feet of snow, while during the spring months they are covered with dead grass, left from the previous year. This serves as an excellent cover to hold the rainfall, which usually appears about the middle of May or the 1st of June. The mountains and higher elevations in the southern portion of the reservation are covered with dense forests of fir, black and silver spruce, Alpine aspen, sugar and yellow pine (Pinus ponderosis), scrub oak, locust, and various briers. The fir grows to an immense size, is wind shaken, rotten, soft, and of very little or no commercial value; the aspen is valueless; the scrub oak makes very fair firewood, but is of no value for any other purpose except as forest cover and a very valuable conservator of moisture; the pine is the most valuable lumber tree and is used by the Indians and the school for the construction of buildings, for repairs, etc. For finishing or other fine grade of work this pine is too soft and is practically valueless.

The narrow valleys are fertile, but contain no water, with the following exceptions: Nogal, Silver Spring, Elk Spring, Tularosa, Carrizo, Rinconada, Tres Ritos, and Ruidoso. The Tularosa flows 570 cubic feet per minute; the Ruidoso, 500 cubic feet; Silver Spring, 38 cubic feet; Nogal, Elk Spring, Carrizo, Rinconada, each about 18 cubic feet, and the Tres Ritos 100 cubic feet per minute.

Measurements were made in May, 1900, during the dry season, rain not having fallen on any portion of the reserve since April 5, 1900, and then only in very small amounts. On other portions of the reservation there are small springs, but during part of the year they are dry or else do not flow a sufficient amount of water to measure. No portion of the Ruidoso on the reserve is farmed or used for any purpose, as it rises at the foot of White Mountain peak and runs east between precipitous mountains, leaving no room for ranches. The Indians have located their ranches in the following watered valleys: Tularosa, 34 ranches and the school farm of 200 acres; Silver Spring, 14 ranches; Elk Spring, 36 ranches; Nogal, 5 ranches; Carrizo, 9 ranches; scattering, 8 ranches, with 3 sheep ranches in the Rinconada. In addition to the above, mountain regions on this reservation form the source of the water supply of the Bonito, Eagle, Cedar, and Hondo creeks. The Ruidoso, Carrizo, Hondo, Bonito, Eagle, and Cedar streams are tributaries of the Pecos River. On all the streams named there are ranches aggregating a large area which are entirely dependent upon these mountains for water. To supply these streams with water sufficient to irrigate the crops and water the herds of these ranches nature has reserved a vast reservoir in the shape of over a half million acres of rugged bowlder and forest covered mountain lands to hold winter's snows and summer's torrential storms till they trickle down slowly to water the hot, parched, and grateful valleys and plains far below. The rain, retarded by vegetation, including forest trees and their cover, sinks into the loose formation and breaks out at lower elevations as springs. Artesian water in the vicinity of Roswell unquestionably has its origin in the Sacramento and White mountains.

All arable land on the reservation has been taken up by the Indians, and, though small in area compared with the great extent of territory, it is all the land that is of any value for farming or grazing, on account of the scarcity of water. All available springs and streams, even wet-weather springs, have been taken up and are being utilized.

The geological formation of the reserve is as follows: Fifteen townships south, limestone; one township west, red sandstone; and the remaining four townships northwest, granite. The only favorable indications of mineral are a few dykes of porphyry, there being no veins of quartz. Not a trace of any valuable mineral has been found in the thirteen eastern sections or townships. Thirteen hundred assays of specimens taken from the remaining townships, collected from the surface to 75 feet below, has not revealed any mineral in sufficient quantities to warrant any person desiring to locate a mineral claim on this reserve if it were thrown open for mineral entry.

The statements made in former reports that this reservation contained gold and silver in paying quantities is not borne out by the facts gleaned from an extensive and exhausting investigation.

This reservation should not be thrown open for public settlement or mineral entry for the following reasons:

There is no mineral that could be used profitably. The mineral resources of the reserve are nil.

There is no part of the reservation that could be homesteaded for agricultural purposes not needed by the Indians. All the water is being used by the Indians.

Extensive inquiry among the actual citizens in the vicinity of the reservation who have agricultural and stock interests develops the fact that, with few exceptions, they are very much opposed to having the reserve opened to public settlement, stating that such an act would ruin their water supply, by permitting the timber to be cut off and the land to be overstocked. It is a well-established fact that the cutting of timber extensively and the overstocking of mountain lands causes droughts and extinction of springs. In this country, and I speak from personal observation and experience, the cutting of extensive areas of timber has the following effect: The laps, tops, brush, etc., dries and burns off, causing the death of absolutely every particle of vegetation over the logged area. Rains fall on this ground, washing every particle of soil off the hillsides, leaving the ground covered with stones. This land does not grow up again in forest. The rains in this country are torrential in character, the extreme difference in the temperature of the plains and the mountains causing very violent downpours and hailstorms. These storms falling on deforested lands run off as they would off a tin roof, flow down the narrow valleys in great floods, causing destruction to beautiful ranches, homes, and even herds of cattle, and depositing millions of tons of débris and silt on good valley land. Before the timber was cut this rainfall would be checked by the timber and forest cover, the ground would not become compacted, the flow of water would be checked by vegetation, absorbed by the loose earth, decayed roots and mulch, and trickle down slowly to supply numerous springs below. Evaporation would be continued from the wooded area for months. On this reserve there is an area that was cut and burned over twenty years ago. It has not yet grown up to forest, nor has it any indication of doing so. It is now covered with scrub oak and locust bushes. No portion of it is covered with annual or perennial grasses. Fresnal Valley, in township 16 south, range 12 east, just on the reservation line, was logged in 1898 and 1899. Not only were the trees cut but small saplings were cut for tramway ties and other purposes. No disposition was made of the laps and tops and during the summer of 1899 a forest fire, doubtless started by the sparks from the locomotives, swept the entire logged district. The mountain sides were swept clean of vegetation and the ground left bare without shrub or grass to retard the run-off consequent to the annual summer rains. The result was that the first hard rain caused a serious flood in this valley. The water rushed from the denuded hills as from a house roof, and carried wood, logs, and even the railway track down to the wider portion of the valley below, covering good agricultural land with tons of débris and silt. Great and irreparable damage was done the agricultural and stock interests of the valley and also of the portion of the plain watered by this valley. The condition of the country this year is appalling. In 1898 this land was included in a forest reserve, which was then opened to public settlement upon the representation that it was needed for homestead purposes. A railroad was built into the region to remove the timber, but no new homesteads have been taken up for agricultural purposes within that area. A very small per cent of the land is fit for agricultural purposes. That had already been taken up, and we have not witnessed "a large influx of thrifty Dutch farmers," not one. "Script" has been filed on the land and the timber removed.

In a less marked degree the effect of overpasturing forest lands may be seen in various places near the reserve, but more particularly just north of the reservation. Thousands of sheep and goats were seen there last year and this. The grasses, shrubs, etc., are just about literally annihilated; the mountain floors present a general broken condition and are scarred with deep washes. On the reserve the forests have been protected from timber cutting and overpasturage, and the mountain floors are unbroken, and the ground is well sodded with annual and perennial grasses and covered with forests. Wherever sheep in large numbers have been pastured for a few years these conditions do not exist, and just north of the reservation there are thousands of acres overgrown with weeds, where originally grew grasses and undergrowth of briers and oak brush. The Mescalero Indian Reservation embraces a portion of the Sacramento and White mountains. Like the country south of the reserve, only a small per cent of the lands are agricultural in character, and the soil is not deep, is loose and porous, and susceptible to wash from torrential rainfall. In the reservation the forest is less dense than further south, and there is even more necessity to protect it from spoliation. The agricultural lands are already occupied by the Mescalero Apache Indians, who are just adopting agricultural and pastoral pursuits, and are at this time self-supporting. If the reserve should be thrown open to settlement only the mountain lands could be located, and these lands have no value whatever, except for forest conservation of moisture. If the reserve should be thrown open it should be immediately embodied in a forest reservation and the forest perpetually protected. The ruin of the forest not only means ruin to the agricultural land now occupied and cultivated by the Indians, but to thousands of acres occupied and cultivated by white settlers outside the reservation. It will mean the abandonment of the Fort Stanton Hospital Marine Service Sanitarium, at Fort Stanton, N. Mex., where the Government is spending $60,000 for the perpetual care of sailors who suffer from tuberculosis. The water supply and the farming lands of the Indians and the Mescalero boarding school will be ruined. At this school the Government has spent large sums of money in establishing a school, and is still spending money for new improvements. An electric-light plant is now under construction. On the necessity of preserving our forest I quote the following from Farmer's Bulletin No. 20, 1894, United States Department of Agriculture:

"Forest ground is not subject to (this) erosive action of the rainfall because in a forest a large part of the rainfall never reaches the soil, as 20 or 30 per cent is intercepted by the foliage and evaporated before it reaches the ground. The rainfall which reaches the surface is rapidly absorbed, as the soil is kept granular and loose and much more of the water is carried off by underdrainage rather than by surface drainage. The forest covering protects the soil in the following ways:

"(1) By preventing rain from falling directly upon the soil, the foliage of the tree crowns intercepting and breaking the force, the water reaching the soil more gently from the leaves and along the branches and trunks of the trees.

"(2) By interposing a loose cover or mulch of litter formed by the fallen leaves and branches, which breaks the direct force of the raindrops and keeps the soil from being compacted or puddled by their blows.

"(3) The deeply penetrating roots and holes left from decayed stumps and roots of trees assist in this underground drainage.

"(4) The litter, with the stumps and projecting roots and trunks of trees, prevent the water from rapidly running over the ground and from gaining momentum and force, which is necessary in order to erode and gully the soil.

"(5) The forest cover prevents the drifting and rapid thawing of snow, thereby insuring more even distribution of the waters and an increase in the time which it can percolate or be absorbed into the soil.

"If the forest floor is not disturbed by fire, nor the litter trampled and compacted by cattle, it always reduces rapid surface drainage and largely, if not entirely, prevents erosive action.

"Just as deforestation of hillsides and hilltops is the first cause for inducing erosive action, so is reforestation the most effective means in curing the evil. This has been demonstrated in France, where the Government and the farmers together have spent, during the last thirty years, over $40,000,000 and expect to expend three or four times that amount to reforest 1,000,000 acres of denuded mountain sides, the soil and débris from which has been carried by the torrents of water into the plain, covering over 8,000,000 acres of fertile ground, and making it useless for agriculture. Sodding for pasture has been found mostly less effective and on the steeper slopes entirely ineffective.

"Wherever the ground in the hill country is not fit for agricultural use, it should be set and kept in forest, not only to make it produce a timber crop, but also to prevent the erosion which finally becomes dangerous to the lower valley lands. Wherever agriculture is possible and profitable there should be such a distribution of forest, pasture, and field as will secure the greatest immunity from erosive and torrential action of the waters. The forest should occupy all hilltops, which, as a rule, have too thin a soil to allow profitable agricultural use; it should be kept growing on the steeper slopes where the water acquires the greatest momentum, and the loosening of the soil by the plow furnishes a most favorable condition for erosive action; it should be placed on all rocky, uneven, agriculturally useless spots, because it will produce useful material even on such unfavorable situations, and, finally, forest belts should be maintained on long slopes alternately with fields and pastures running along the brow of the slope of widths and at distances proportionate to the character of the land and the angle of the slope on the steeper slopes closer together, on the gentler slopes farther apart. These belts, acting as a barrier to break the force of the water, will prevent an undue accumulation of surface waters, and will protect to a considerable degree the lower fields from washing. Farmers, therefore, living in the eroded hill country should start upon the work of reforestation with a well-conceived plan. They should determine beforehand which parts ought to be in forest, and which they may reasonably expect to adapt again to agricultural uses. They should understand that they must begin this work at the origin of the evil, at the very tops of the hills where the water begins to gather and acquire force, and gradually proceed with their work down to the lower levels."

While foreign governments and certain States in this country are paying out such immense sums of money for the reforestation of lands, our Congress should never permit the title of this reservation to pass out of the hands of the Government. The Government is now feeding the Pima Indians at an expense of $20,000 on account of lack of water for their crops. This lack of water was caused by extensive cutting of timber and the overstocking of the lands from which their springs derived their flow. The records of the Weather Bureau show that they have had their annual rainfall. This water did not soak in but ran off in floods. The steady decrease in the flow of the Rio Grande River of late years is caused almost wholly by overstocking and the cutting of timber about the sources of the river.

The Mescalero Indians are bitterly opposed to the opening of the reservation. They do not ask of the Government one cent of money for their support, but do ask the Government to protect their water supply and secure to them a permanency to their peaceable occupations. They do not want to have the same trouble over their water supply as other Indians in New Mexico and Arizona are having.

A BRIEF HISTORY OF THE MESCALEROS.

To watch the development of a band of savage nomads who for untold ages gained a livelihood by making depredations upon whatever section of country they might happen to be in into a community of farmers has in it a certain degree of interest, even though the type of civilization be not a very high one. The Mescaleros are one of the numerous bands of Apache Indians. They take their name because of their fondness for a plant of the palm family called mescal. It is the pulpy heart of which they are so fond, and the preparation of which takes several days. A hollow is made in the earth, the mescal buried beneath stones and roasted by a smoldering fire, night and day, until tender. In taste it resembles candy made from ordinary sorghum molasses and is not unpalatable even to a civilized palate. From the report of Dudley, the superintendent of Indians in New Mexico, in 1873 and 1874, we find that none of them at that time had shown any disposition to work and that their consent to the establishment of a school had not been gained. They were importunate in their efforts to change the borders of their phylacteries so as to include the Sacramento and White mountains. The earliest records of this office are of 1873. The first pass record is issued to six men of the tribe at the request of Roman, a chief, that they may go out to hunt the Indians belonging to but absent from the reservation. They were to bring them in, promising support and protection conditional on their remaining peacefully at the agency, then located at Fort Stanton, N. Mex. The agent, Bushnell, was succeeded by Crowthers, and he in turn by Godfroy, July 8, 1876. Nothing of the years intervening between 1874 and 1876 is left of record. The office of the agency had at that time (1876) been moved to a building about 1 mile west of the present location. In August, 1876, the number of the tribe was augmented by the arrival of a band of Apaches who had been for some months in old Mexico. It was from them that news was had of a party which had left here in June, and arrangements were made with one J. A. Lucero to return them to this reservation at the rate of $1.50 per head. The job of returning Indians seemed to be a paying one in those days, and one wonders if they were not sometimes induced to stray in order to be returned. The agent at this time reports the tribe to be without shelter other than the flimsy wicky-ups made of pine boughs, and nearly naked. The following September a teacher is first mentioned as being a necessary adjunct to the force of employees. On November 10 Lucero arrived with the runaways as per his contract, delivering 2 chiefs, 7 captains or headmen, and 54 children, all of whom were reported as in a destitute condition. The fatted calf was killed and a "welcome home" was given. That there was then some desire to do well was evinced by the fact that at a council called to discuss their plans and future 3 subchiefs came forward and voluntarily on behalf of their bands offered 12 horses, which by their own admission were to atone for 6 horses they had stolen. On the 1st of January, 1877, a school was opened with the wife of the agent in charge. The smallpox, however, early in February had reduced the pupils to 2 in number. The middle of the month found the clerk in possession of the field, the agent himself having succumbed to the epidemic. In November San Pablo with 31 followers came in to the agency, were given a feast, and made much to do over, which, however, did not seem to make them merry, as their murmurings were loud and long because of their friends being in the San Juan country. It seemed to be an era of horse stealing, and whether the Mescaleros were more sinned against than sinning I know not. On December 4, following, San Pablo and his followers came up missing. An investigation was set on foot to ascertain their whereabouts.

On the same date 52 Gila Indians came in footsore and weary to be feasted. Two days later a whisky drunk killed one and wounded many. Copies of letters on file, dated in 1879, show Gen. Lew Wallace to have been governor of this Territory at that time and Russell had succeeded Godfroy as agent. In August Victoria and his band, also a number of Lipan Indians, arrived and were feasted. The day after Victoria's coming one of his men killed a Mescalero, and a few weeks after killed a Mescalero woman—this last just before the exodus of himself and tribe. In November, 1879, the agent requests troops from Fort Stanton to protect the public property, which request he afterwards withdraws. The Indians, in some cases, justified their thefts by saying they thought it no harm to steal so far from home. It is noteworthy that Victoria tried at this time to induce the Mescaleros to join in his raids. However, afterwards some 20 or 30 were reported as having taken their ponies to go and join his forces, having become emboldened to do so probably by the success of his skirmishes with the military. In July of 1880 there was trouble between the Mexicans and Mescaleros. One Indian was murdered, and revenge was taken by burning a train of wagons with their contents which belonged to the native citizens. The 22d of the same month couriers were hurriedly dispatched to Fort Stanton for troops, which arrived by noon of the next day. In March, 1881, Caballero had offered to go out and induce Victoria to come in and surrender, in which plan he failed to succeed. The troops were considered inadequate to the emergency which would exist if, as was expected, Victoria should come in hostile mood, so another request for troops was made. The soldiers on arrival decided to take the initiative, and word was sent over the reservation to the Mescaleros to come in to the agency where they would be taken care of—and that was all. It was in April, 1880, that the outrages on the Mescaleros were perpetrated by the military. Ponies were confiscated, and Nautzilla, the chief of the Mescaleros, was led by false statements to bring in his people for that strange protection which confined men, women, and children for days in a pen unfit for cattle, and which ended in the brutal, indiscriminate shooting of 14 victims. Small wonder that as a result many fled the reservation not to return for months, only hunger and direst necessity finally bringing them back. A school was maintained for a few months during the year, but the Indians showed little appreciation of the opportunity offered their children. The year 1881 seems to have been uneventful. Eighteen hundred and eighty-two was anything but quiet, being marked by depredations and fights with hostile intruders, during one of which latter the agent was shot twice through the arm. In 1883 10 of the tribe enlisted in the United States Army. In 1884 the boarding school was started, with accommodations for 15 pupils. A few months previous the Jicarillas had been brought to live on this reservation, but their discontent after a time necessitated their removal from it. The reports of 1885 show 462 Apaches on the reservation and 721 Jicarillas. There were 30 pupils in the boarding school and 10 in the short-lived day school which was started at Three Rivers. Cowart succeeded Llewellyn as agent in 1886. News had come of the anticipated surrender of Geronimo, which was expected to have a good effect on the Mescaleros. While true that there were a few of this tribe with Geronimo, yet it is also true that some of the Mescaleros gave the Government valuable aid in that campaign by acting as scouts. The death of San Juan occurred during the year, and was felt to be quite a loss, as his example had been such as to urge his people to industry. The Jicarillas gave much trouble throughout the year by leaving the reservation and on two occasions stealing their children from school, General Miles, then at Fort Stanton, sending troops who returned them. In May they were removed to another reservation to the great relief of both the agent and the remaining tribe, which now numbered 438.

In 1887 the day school at Three Rivers was discontinued, the removal of the Jicarillas making it unnecessary. An Indian council to act upon depredation claims was organized, and it is amusing, in imagination, to watch that solemn conclave weighing the evidence with grave faces, but which invariably ended in their solemn protestations of the innocence of this tribe. The Indians during the year did $720 worth of freighting between here and Las Cruces, N. Mex. In 1888, during a tiswin brawl, two men, two women, and a child were shot. In June one of the pupils, a little girl, died and was the first Mescalero ever buried in a coffin. In July a cour of Indian offenses was established. About this time the Mescaleros were clamoring for the return of their friends and relatives who had been taken South, prisoners, with Geronimo. Their importunities finally resulted in the return of "Alabama Charlie" and four other families. In the annual report of that year we find the statement that no Mescalero was ever punished by law for taking the life of another. In 1890 school and all other work was suspended for a time by another smallpox epidemic. The question of a field matron was agitated for the first time ten years ago. (One was allowed, beginning July 1, 1900.) There were reported to be 33 children in school here and 15 at Grand Junction, Colo. Hinman Rhodes was now agent, having succeeded Bennet. Eighteen hundred and ninety-one saw no event of unusual importance—nothing but drunks and fights. The report shows 13 cases of polygamy then existing. In 1892, 527 were enumerated in the tribe, 50 pupils were enrolled in the school, and 450 acres of land reported in cultivation. The report for February, 1891, shows the Indians as peaceable, though there were four homicides during the month. Burnett succeeded Rhodes as agent in 1893. The year following we find the Mescalero, with whom the ties of blood seem very strong, clamoring for the release of other relatives who, after eight years, remained prisoners at Mount Vernon Barracks, Ala.

April saw a free-for-all tiswin fight, in which heads were broken, one life lost, and a general mêlée enjoyed. During the year the few Comanches who had been living on this reservation returned to their own country. The wife of Comanche John, who was a Mescalero, evidently differed from the Ruth of Bible fame, for she preferred to remain with her own people. These visits from one reservation to another seemed to breed discontent, and were soon discontinued. Three young men who had been with some of their people at Mount Vernon Barracks, and who had been sent from there to Carlisle school, arrived in May to find and live with their relatives here. A request, which in the light of a later day seems strange, was from Penn Scott, an Apache, who wished to go to Fort Sill to live, giving as a reason that the Indians here drink too much tiswin. Penn has shown a persistent aversion to work, as great as his distaste for tiswin drinking. In 1895 Lieutenant Stotler relieved Burnett, and it is to his policy of urging, pushing, and shoving the Indians to work that much of the improvement in this tribe is due. Nothing of any value for or with these people had been done before his coming. He found the Indians living entirely in tepees and subsisted wholly by the Government. All the freighting was done by natives, and what little work was done was done by employees. Two Indians were killed in a tiswin brawl during his first year. The first year he colonized some of the Indians in Elk Springs Valley, opened up the springs, and ditched the land so as to arrange drainage. In April the newspapers gave much space to sensational accounts of an outbreak, which existed only on paper. In July, 1895, the agent made a bonfire of all the effects of some tiswin makers, and the manufacturers were themselves incarcerated in the guardhouse and put at hard labor. There were 74 in school at that time. During vacation the children were retained in school, though they were given outing parties at intervals. There were a few runaways among the pupils, but the application of a "shingle" seemed an effectual remedy. One of the perplexing questions to be dealt with was found to be the dominant power of the mother-in-law, her authority being found to sometimes supersede the agent's in matters so important as placing children in school. This reign of terror was only broken by threats of the guardhouse. In December, 1895, Sah na hah, an Indian from near Anadarko, Okla., came to get his wife, who was here. On the day following his departure a squaw was abducted, the daughter of Camiso, a Mescalero, and wife of Civatta, a Lipan, who had left the reservation some three years before. The agent wrote to the Kiowa and Comanches for an investigation. Rumor had it that she had been taken by the "Apache Kid," whose custom it was to steal a woman previous to his return to the San Carlos Reservation. So far as I know, the truth of her whereabouts is unknown. The same month Domingo, a good-for-nothing, escaped from the guardhouse, stole a horse, and left for parts unknown. The agent does not mourn his loss, though as a matter of duty makes inquiry of other agents. He is still at large. About this time Magoosh, a man of strong personality, was appointed Indian farmer and found to be efficient, doing what he could by example as well as precept to inspire his people to tend the land. Among the developing influences brought to bear upon these children in mind, but less in ambition, was the giving to each head of a family a number of sheep as a sort of stock in trade. The cutting of lumber and the erection of houses was enforced. Cook stoves, as a further inducement toward adopting civilized modes of life, were given to those showing any real desire toward improving their condition. Tubs, another factor in civilization, were soon earnestly requested by some of those in whom a ray of ambition was beginning to dawn. In March, 1896, the fiat went forth that locks must be shorn, and by diplomacy, bribes, and punishment all the men were induced to part with their raven tresses. It was now that these Indians were beginning to see the finger of fate pointing to work as their inevitable destiny. On the heels of these changes pantaloons were adopted, though it is not recorded that they were at all particular about having them creased. A hungry stomach was found to be an excellent mode of discipline. It is refreshing to mark the difference in the tone of the letters of former agents, who were continually calling for larger appropriations, and his, which continually advocated a decreasing policy in the issue of rations. In July, 1898, he was relieved from duty at this place, after having worked indefatigably to make these Indians self-supporting for three and one-half years.

Discipline, work, sobriety, allotment of land, and an empty stomach have solved the "Indian problem" on this reservation in the last five years, after "adequate appropriations," "increased supply of rations," "council rooms," and "tiswin and whisky" had a full, free, and fair hand at it for a period extending over twenty-three years. These Indians are now self-sustaining, all rations and annuities having been cut off on July 1, 1899, except to old persons who are so incapacitated by injuries, old age, or blindness as not to be able to earn a support by farming or the care of sheep or goats. Their sheep and goats are on the increase, some Indians having from 600 to 800 sheep, whereas a few years ago they had not more than a hundred or so. Their horses are rapidly improving.

These Indians have not manufactured any tiswin since October, 1897. On January 29, 1899, a white man sold a quantity of whisky to a number of the Indians. Both parties to the transaction were severely punished. On that date the traffic ceased, and consequently I am able to report that there has not been a drunken Indian on this reservation since then. Eighteen months of absolute sobriety has had a wonderful effect in making these Indians more industrious and self-reliant. All have now adopted the white man's dress. All marriages are now performed by the superintendent and a record kept of them. Divorces are also regulated by the superintendent, or, rather, he has refused to grant any so far, as their misunderstandings have been fixed up without a divorce. Much is yet to be done, however. The backward ones must be shoved up to the front, the timid encouraged, the lazy made to do penance in the guardhouse at hard labor, and the ignorant taught.

MESCALERO BOARDING SCHOOL.

One hundred per cent of the available school children on the reservation are in the school; 128 out of a population of 482, all children from 5 to 19 years of age. Attendance is compulsory. The average attendance for the year was 117.

The following improvements were made by the employees and schoolboys: One barn, 40 by 90 feet, for 15 horses, 30 cows, with room for 100 tons of hay, harness room, etc.; 3 miles of new wire fence; board fences; ditches and flumes; 96 acres of land put under cultivation and added to the school farm; overshot wheel attached to wood saw; enlarged dining room and boys' dormitory; repairs to main building, and stocked one lake with rainbow trout. We are now putting in an electric-light plant, to be run by a water wheel. The work is being done by the employees and Indians, under the supervision of an expert mechanic. The farm is looking well, and we have already cut 15 tons of hay.

During the year, besides the literary studies, the boys were taught carpentering, plastering, stone laying, blacksmithing, farming, gardening, stock raising, etc. The girls were taught housekeeping, sewing, dressmaking, cooking, laundering, blanket making, embroidery, etc. A number of the old Indians attended our "night school for old Indians" and learned to write their names and to speak some English.

Our baseball nine won some very nice games at the agency with other teams, and had some very nice trips to Alamogordo and other places to play local teams. It did the boys a great deal of good.

The work in the class room and in the various departments has moved along smoothly, and on the whole has been quite satisfactory. Care has been taken by the employees to instill the principles of cleanliness, politeness, kindness, and morality.

I have the honor to be, very respectfully,

WALTER MCM. LUTTRELL,
Superintendent and Special Disbursing Agent.

The GOVERNOR OF NEW MEXICO,
Santa Fe, N. Mex.

PUEBLO AND JICARILLA AGENCY,
Santa Fe, N. Mex., August 14, 1900.

SIR: I have the honor to submit the following report of the operations of this office for the fiscal year ending June 30, 1900:

PUEBLOS.

Tribes.—The Pueblos under this agency are composed of five different tribes, which, though similar in their habits and customs, are totally different, and speak languages entirely dissimilar. The strongest is the Queres, composed of the pueblos of Cochiti, Santo Domingo, San Felipe, Santa Ana, Zia, Acoma, and Laguna, containing a population of 3,394. The Piros tribe is composed of the pueblos of Taos, Picuris, Sandia, and Isleta, with a total population of 1,607. The Zuñi pueblo is a distinct tribe, but from certain similarities is thought to be derived from a common stock with the Queres people. Its population is 1,523. The six Tegua pueblos of San Juan, Santa Clara, San Ildefonso, Pojoaquo, Nambe, and Tesuque, with a population of 910, lie in a body to the north of Santa Fe. The pueblo of Jemez is the only remaining one of the tribe which it represents, to which also belonged the pueblo of Pecos, abandoned some fifty years since. Population, 449. The figures given above are in each case exclusive of children away from home attending boarding schools, either Government or sectarian.

Population.—The population of the individual pueblos is as follows:

Pueblo.	Males over 18.	Females over 14.	School children 6 to 18 years old.	Total population.
Acoma	133	147	119	492
Cochiti	65	59	48	198
Isleta	397	291	232	1,021
Jemez	154	143	114	449
Laguna	311	331	257	1,077
Nambe	24	21	27	80
Picuris	32	32	27	96
Pojoaque	4	3	3	12
Sandia	33	21	14	76
San Felipe	188	131	81	514
San Ildefonso	41	44	35	138
San Juan	126	103	103	379
Santa Ana	104	61	42	228
Santa Clara	66	71	56	221
Santo Domingo	248	229	157	771
Taos	129	102	100	414
Tesuque	26	20	32	80
Zia	36	28	32	114
Zuni	560	519	276	1,523
Total	2,677	2,356	1,755	7,883

It will be observed that there are some discrepancies between these figures and those given last year. The population as given for Acoma last year was immensely overestimated, as it was impossible to secure a correct census of the people, and their habit of continually moving from one village to another made it difficult to determine just how many belonged at each village. At Cochiti 95 Mexicans who live in the pueblo among the Indians were included in the population, but are omitted this year. At Santo Domingo a large proportion of the people have two separate residences, at each of which they are to be found during a part of the day, and as a consequence many of them were enumerated twice last year. The abandoned pueblo of Pojoaque, at which two families yet live, is included in the above in order to render the enumeration complete. The subpueblos of Laguna, Pahuato, Paraje, Casa Blanca, Santana, and others are all included with the mother pueblo this year, while their population was given separate last year, which greatly increases the number at Laguna. All other differences may be accounted for on the score that all school children attending school away from home are omitted from the enumeration this year, while they were included last.

Mortality and infirmities.—The statistics of deaths, blind, deaf, and dumb, are as follows:

Pueblo.	Deaths during year.	Blind.	Deaf.	Dumb.
Acoma	5			
Cochiti	24			
Isleta	42	6	1	
Jemez	10	4	5	
Laguna	13			
Nambe	1	3		
Picuris	6	3		
Pojoaque				
Sandia	2	1		
San Felipe	14	4	7	
San Ildefonso	4	3	2	
San Juan	9	9	1	
Santa Ana	3	6	5	1
Santa Clara	10	1	2	1
Santo Domingo	16	3		
Taos	9	4	4	
Tesuque	8			
Zia	4	1	3	
Zuni	64	10		
Total	244	58	30	2

Cultivated lands and produce.

Pueblo.	Cultivated.	Wheat.	Corn.	Melons.	Hay.
	Acres.	*Bushels.*	*Bushels.*	*Number.*	*Tons.*
Acoma	342½	1,178	1,710	....	....
Cochiti	260	773	1,530	100	....
Isleta	8,510	11,706	20,109	....	....
Jemez	2,557½	14,318	12,478	29,611	....
Laguna	664	1,978	2,826	....	....
Nambe	64	824	270	....	....
Picuris	103	412	408	....	....
Pojoaque	12	38	60	....	....
Sandia	383	1,159	1,808	....	....
San Felipe	1,200	8,000	10,000	82,000	392
San Ildefonso	99	20	20	....	....
San Juan	506	2,420	5,786	12,273	206
Santa Ana	1,182	5,921	5,561	....	143
Santa Clara	440	906	3,319	4,498	170
Santo Domingo	918	2,337	6,854	6,300	....
Taos	655	6,075	5,540	....	16
Tesuque	30	62	196	....	....
Zia	141¾	169	78½	811	7
Zuni	5,201	14,388	20,060	59,775	6
Total	18,378¾	69,164	97,613½	145,368	930

Other produce is as follows: Cochiti, 22⅛ bushels onions, 71 bushels beans, 1,500 pounds Chili; Nambe, 4 bushels onions, 51½ bushels beans, 340 pounds Chili; Picuris, 10 bushels beans, 23 bushels pease; San Juan, 2 bushels onions, 24 bushels beans, 5 bushels sweet corn, 2 bushels pease, 1,364 pumpkins; Santa Ana, 14 bushels beans, 55 bushels pease, 5,058 pounds grapes; Santa Clara, 1⅛ bushels beans; Taos, 60 bushels oats, 29 bushels beans, 74 bushels pease; Zuni, 822 bushels onions, 875 bushels beans, 2,857 bushels sweet corn, 30,740 squashes, or a total of 60 bushels oats, 850⅛ bushels onions, 1,075⅝ bushels beans, 1,840 pounds Chili, 154 bushels pease, 2,862 bushels sweet corn, 1,364 pumpkins, 30,740 squashes, and 5,058 pounds grapes.

Domestic animals.—The stock owned by the various pueblos is as follows, exclusive of sheep:

Pueblo.	Cattle.	Horses.	Mules.	Burros.	Goats.	Hogs.	Fowls.
Acoma	616	441	17	212	323	77	76
Cochiti	69	147	....	46	....	....	124
Isleta	498	1,389	89	52	502	75	117
Jemez	267	423	11	175	....	42	47
Laguna	1,298	1,274	74	274	1,539	141	179
Nambe	23	39	1	20	150	5	13
Picuris	60	42	....	40	....	14	40
Pojoaque	....	2	....	2	....	....	....
Sandia	113	76	....	22	20	5	....
San Felipe	700	900	....	1,000	25	12	4
San Ildefonso	26	59	....	44	....	6	12
San Juan	52	132	....	139	....	64	170
Santa Ana	261	459	54	158	....	7	....
Santa Clara	41	151	....	97	....	10	88
Santo Domingo	812	602	1	107	....	3	60
Taos	238	486	....	115	....	33	184
Tesuque	38	33	....	50	....	....	....
Zia	88	193	16	63	....	5	109
Zuni	183	1,215	218	381	4,207	63	1,264
Total	4,876	8,063	431	2,917	6,766	562	2,487

Sheep and wool.

Pueblo.	Sheep.	Wool.	Value of wool.
Acoma	3,317	13,290	$1,901.00
Isleta	3,500	7,800	1,012.00
Laguna	19,482	38,781	5,610.00
San Felipe	300	450	54.00
Zuni	46,744	82,744	8,274.40
Total	73,448	143,015	16,851.40

Farmers.—During the year 2 additional farmers have been appointed, 1 for the pueblo of Taos and 1 for the two pueblos of Laguna and Acoma, making a total of 4 farmers among the pueblos. While none of them have had time to accomplish very far-reaching results, the good effects which are already apparent are a prophecy of the untold benefit which will result to the Indians from their labors.

Schools.—Reference to my annual report for the year ended June 30, 1898, just previous to my taking charge of this agency, shows 14 schools, with an enrollment of 551 and an average attendance for the year preceding of 266.9. There were during the quarter ended March 31, 1900, the last quarter in which all the schools were under my care, 19 schools in active operation, with a total average attendance of 555.02, an increase of 5 schools, and an average attendance more than doubled during the 7 quarters they were under my care. In May a new school was opened at Pescado, one of the subpueblos of Zuni. Schools were authorized for Nutria and Ojo Caliente, but on account of various delays have not yet been opened. These schools are very important to the service at Zuni pueblo, as they will have a strong tendency to keep the people from crowding to Zuni proper during the winter season, thereby rendering the latter a hotbed of disease and death whenever an epidemic strikes the people. If they can be induced to remain in the farming communities, a far more sanitary condition will result than at present obtains, and the influence of a school is the only apparent means of breaking up the old custom.

The schools at Cochiti, Jemez, Nambe, Picuris, San Ildefonso, San Juan, Santa Clara, Santo Domingo, Taos, Tesuque, and Zia were transferred to the jurisdiction of the superintendent of the Santa Fe school April 1, and the remaining schools of this agency, viz, Acoma, Isleta, Laguna, Pahuate, Paraje, San Felipe, Santa Ana, Zuni, and Pescado, and the unorganized schools at Nutria and Ojo Caliente, were transferred in a similar manner to the superintendent of the Albuquerque school June 30.

The work of the teachers and employees has been exceptionally good during the past year, each exerting himself or herself to the utmost to bring the schools up to the highest possible standard of efficiency.

As heretofore recommended on many different occasions, if it is the intention to maintain these schools among the Pueblos the Department should build modern and comfortable schoolhouses which will be an inspiration to the pupils to strive after better things, and discontinue the present plan of having school conducted in an Indian house, which tends to confirm the crude ideas of home architecture which he may imbibe from his parents and surroundings.

Contract school.—The contract school at Bernalillo has continued during the past year to maintain its former high standard. The influences to which they are subjected will always be a blessing to the pupils who are so fortunate as to attend this institution.

Aztec Indians in the nonreservation schools.—For some years past it has been a custom among some superintendents of nonreservation schools to admit any person with a Spanish name who would furnish an affidavit that Indian blood flowed in his veins. One superintendent openly went to Mexican villages and solicited pupils from families not before suspected of being Indians, making the claim that the private soldiers that came to New Mexico with the Spanish conquerors were Indians of the Aztec and other Mexican tribes, and that the present Mexican population of New Mexico are descendants of these Aztec Indians, and consequently are Indians under the meaning of the law. I understand that he secured a number of these Aztecs for his school. The number of Mexican pupils in the Albuquerque school has been so great in times past that it is called in that city the "Mexican Industrial School." I do not think the present superintendents of either the Albuquerque or Santa Fe schools will resort to such practices, but this agency has been visited by three different superintendents of distant nonreservation schools within the past eighteen months who were not deterred by any such scruples. One went to the Mexican village of Taos and secured a number of pupils from the Presbyterian Mission school at that point, almost wiping out the latter. Another superintendent came to Santa Fe and took children from this city to his school on three separate occasions, taking about 75 in all. Persons acquainted with these children tell me that scarcely one of them shows the least appearance of Indian blood. In none of these cases were the descriptive statements required by section 17, Rules for the Indian School Service, furnished to this office.

Not only is this practice an injustice to the Indians, but the expense of transporting these children to distant points and maintaining them there is great. In this connection, I would call attention to the fact that there are enough full-blood Pueblo children in New Mexico to fill both the day and nonreservation schools and have several hundred left over for outside institutions without going to distant points to collect children for education in this Territory.

Missionaries.—The Dutch Reformed Church maintains two missionaries at Zuni—Mr. A. Vanderwagen and wife. The Presbyterian Church has a medical missionary at Laguna, Rev. C. E. Lukens, who is doing great good in relieving disease among them.

The Presbyterian Church supports a small day school at Soama, a village of Laguna Indians lying between Laguna and Acoma. Its two teachers are a great help to the people.

The work of the St. Catherine's Indian School in this city is proving of great benefit to the Pueblos located near Santa Fe, from which about 100 children are taught and cared for each year.

Health.—On the whole, the health has been excellent this year. The only epidemic was an outbreak of measles at Isleta, from which about 20 died. There were also about 20 deaths from malaria at Cóchiti during the early part of the year.

Physicians.—No physicians have yet been sent to the Pueblos, though there is a pressing need for medical attendance on the sick. I desire to here renew my former recommendations that 5 physicians be appointed for the Pueblos. These can be assigned to central points from which all the Indians may have medical attendance. In case it is impossible to appoint regular physicians it has been suggested that the need could be partially provided for by including in the requirements of supervising teacher that he be also a physician. On visiting the schools he can then examine cases of sickness and give instructions to the teachers which will enable them to save many lives. I consider the suggestion a good one and worthy of consideration.

Irrigation.—There has been but little change in the condition in this regard during the past year. All the ditches are in good condition.

The case of Jose A. Ribera et al. *v.* Pueblo of Nambe has been recently decided. The full amount of water claimed by the Indians has been confirmed to them.

The appointment of a superintendent of irrigation, which I am informed will shortly be made, will undoubtedly prove of untold benefit to the various Pueblos by enabling them to learn how they can change their ditches to take in more land.

Murder at Acoma.—About the middle of April a double murder occurred at the Pueblo of Acoma. It is impossible to know the exact facts in advance of the trial. As claimed by the Indians, Faustin Valle found his father-in-law, Hash ka ya, in criminal intimacy with his own daughter, Faustin's wife, and killed him. Hash ka ya's brother, George Edward, tried to arrest Faustin, and upon the latter's resisting arrest killed him. The matter was reported to the Territorial authorities and George Edward was arrested and placed in jail to await trial for murder. The district attorney has promised to bring the case to trial as quickly as possible.

Reservation for Laguna Indians.—Some months ago the matter of the necessity of a reservation for the Laguna Indians was brought to my attention, and under date of June 30, 1899, I requested that steps be taken to secure a reservation to the Laguna Indians of lands now used by them, but to which they have no legal title. Out of the 17,361 acres of land in their grant but 215 can be used for farming purposes. The El Rito, San Juan, and Cigante purchases can only be used for pasturage. There are some small farming areas on the Paguate purchase and the Santa Ana purchase, but the main dependence of the Pueblo for farming is in the valley of the San Jose River, between the Santa Ana purchase and the Pueblo grant. This area is about 5 miles long and 2½ miles wide, bounded by mesa land on both sides. Within this area are the Laguna villages of Santa Ana, Casa Blanca, and Paraje, with their fields, orchards, and irrigating canals. This tract contains the largest area of farming land operated by them, and has been occupied for more than one hundred and fifty years. There is a spring and ranch 4 miles north of the Pueblo, one 7 miles southwest of the Pueblo, and one 5 miles south. These places are used as stock ranches and are the only ones near the town that can be used for such purposes. These lands were all claimed by the Pueblo of Laguna, but the Court of Private Land Claims decided that they did not hold title to them. This is a very important matter, and I again most earnestly request that it receive prompt attention and favorable action, as the only resource of the Pueblo outside of actual support by the Government is to have the valley of the San Jose at least reserved, and the springs mentioned are much needed. Outsiders are beginning to come onto this land and settle, and if not stopped will be a source of continual trouble in the future.

Litigation.—Progress has been made in most of the cases mentioned in my last report, but very few final decisions have been reached.

Present condition.—The condition of the Pueblos this year is on the whole better than usual. With the exception of San Ildefonso and Zia all have fair crops.

Needs.—I have here the honor to call attention to the great need of flouring mills among the Pueblos. Their method of making flour is by grinding wheat between two stones by hand, which work is all performed by the women. The great excuse which the Indians make why the girls can not be sent to school is that they are needed at home for the grinding. The Pueblos just north of Santa Fe are located near enough to mills to have their grinding performed without this laborious process. There should be five mills set up among the Pueblos, one at Zuni, one at Laguna, one at Jemez, one at Isleta, and one at San Felipe. The other Pueblos are located sufficiently near these points to have the benefit of their use. These mills should be of a size costing from $1,000 to $2,000 each.

JICARILLAS.

Population.—The last census shows a population of 815, a decrease of 16 since last report.

Agriculture.—As these Indians were unable to procure seed for planting this year they will raise but little besides hay.

Timber.—I can do no better than repeat my recommendation of one year ago. "A large part of the reservation is covered with exceptionally fine timber, part of which could be marketed and the proceeds used in the purchase of cattle and sheep for the Indians. In this way the Jicarilla Apaches can be made self-supporting in a few years; but unless they are given the means to turn their attention to stock raising they will continue to be a care to the Government for many years to come. This timber, standing as it does, is of no value to anyone but could easily be the means of giving the Apaches a start in self-support, which would be the means of relieving the Government of the responsibility and transform them from dependents to citizens."

Allotments.—These remain in exactly the same condition as heretofore, no action having been taken.

Missionaries.—The Methodist Church supports two missionaries on this reservation.

Roads and bridges.—Four miles of road was built and 25 miles repaired by the Indians during the year.

Arts and trades.—The Indians realized about $7,000 during the year from the sale of baskets, bows and arrows, and bead work.

Indian courts.—The court here is composed of three judges, who have punished 4 Indians during the year for Indian offenses. Fifty-one Indians have also been punished by confinement to agency jail for being drunk and disorderly, and for leaving reservation without permission.

Fences.—About 10,000 acres of this reservation is under fence. Three thousand rods of new fencing was built during the year.

Products and stock.—The Indians have about 600 acres under cultivation this year, on which they have raised 200 bushels wheat, 325 bushels oats, 75 bushels corn, 400 bushels potatoes, 35 bushels onions, 20 bushels of beans. They also cut about 600 tons of hay. They own 1,523 horses, 12 mules, 131 burros, 60 cattle, 3,060 sheep, 609 goats, and 90 domestic fowls.

Issues.—Issues are made semimonthly. There are also small issues of annuity goods each year, but no cash annuity.

Education.—There are now 210 children of school age on the reservation. These people are as yet without school facilities, but there is a school building to be completed by December 1, which will supply this need.

Health.—The health has been good during the past year, there being no epidemics of any kind.

Dwellings.—During the past year 10 houses have been built by Indians, with some Government help, making 295 houses now occupied by Indians, a net increase of 5 over the past year.

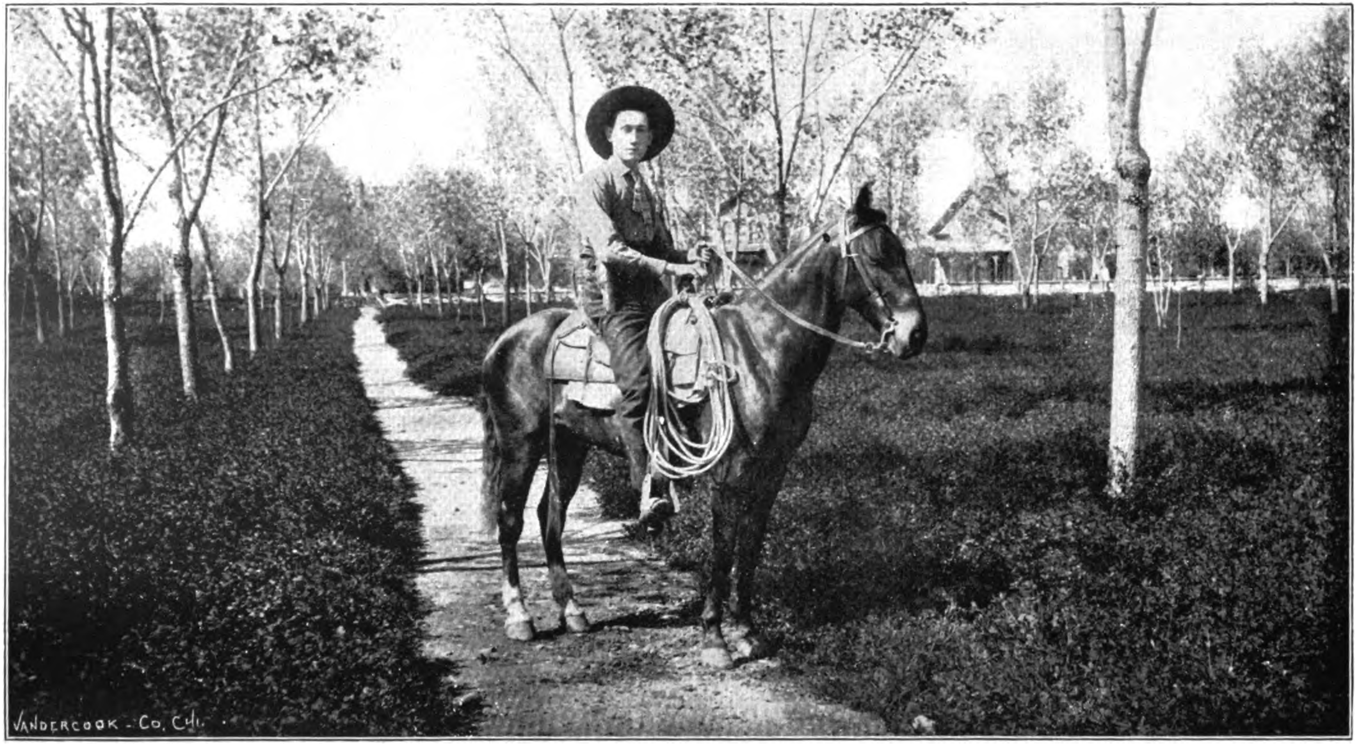
Present condition.—The present condition of these Indians is very poor. It is very difficult at any time to raise crops on this reservation, but on account of the Government failing to furnish them with seed this year, and the total failure of all crops last year on account of drought, they are raising practically nothing, and the Government rations are not nearly sufficient for their needs.

Needs.—Before the Apache can ever become self-supporting on his present reservation he must be provided with stock, either by the sale of timber, as suggested above, or by some other means. The reservation is totally unfit for agriculture, but is well adapted to stock rasing. The Apache Indian is too poor to secure the necessary amount of stock to enable him to support himself by their care, and he will remain a burden upon the Government until they are provided.

Respectfully submitted.

N. S. WALPOLE,
United States Indian Agent.

The COMMISSIONER OF INDIAN AFFAIRS,
Washington, D. C.


VANDERCOOK - Co. CHI.

A NEW MEXICO ROUGH RIDER.

St. Vincent Sanitarium,
Santa Fe, N. Mex., June 2, 1900.

Sir: In handing you this report of St. Vincent Hospital and Orphanage I wish to thank you and your official associates for kind attention and prompt and full payment of tax levy assigned these institutions.

Very respectfully, yours,

Sister Eulalia,
Sister of Charity.

Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

Report of St. Vincent Orphan School, fiftieth fiscal year, from March 4, 1899, to December 2, 1899.

Children in asylum March 4, 1899	32
Children received during the year	39
Children taken by relatives and friends	28
Children died during the year	1
Children remaining in asylum December 2, 1899	42

Financial statement of St. Vincent Orphan School, fiftieth fiscal year.

Receipts.		Expenditures.	
From Territorial appropriation	$3,999.60	Groceries and bread	$1,520.65
Tuition fees	143.90	Meat	700.50
		Milk and butter	365.80
		Drugs	27.00
		Dry goods	450.00
		Mending shoes	40.40
		Hose	85.60
		Hats and trimmings	50.75
		Coal and freight	350.90
		Coal oil	78.80
		School books, slates, etc	69.65
		Writing material and stamps	20.45
		Shoe polish and laces	10.80
		Laundry soap	79.85
		Toilet articles and soap	67.35
		Wood	75.00
		Shoes	150.00
Total	4,143.50	Total	4,143.50

Report of St. Vincent Orphan School, fifty-first fiscal year, from December 4, 1899, to June 2, 1900.

In asylum December 4, 1899	42
Children received to June 2, 1900	10
Children taken by relatives and friends to June 2, 1900	14
Children remaining in asylum June 2, 1900	38

Financial statement of St. Vincent Orphan School, fifty-first fiscal year.

Receipts.		Expenditures.	
From Territorial appropriation	$2,666.40	Groceries and bread	$875.39
		Meat	475.50
		Milk and butter	275.50
		Drugs	25.01
		Dry goods	190.00
		Mending shoes	48.00
		Hose	55.00
		Hats and trimmings	35.00
		Coal and freight	284.00
		Coal oil	55.50
		School supplies	55.50
		Writing material and stamps	17.75
		Shoe polish and laces	11.00
		Laundry soap, starch, etc	45.00
		Toilet articles, soap	25.00
		Wood	25.00
		Shoes	158.25
Total	2,666.40	Total	2,666.40

Report of St. Vincent Hospital for the fifty-first fiscal year, from December 4, 1899, to December 1, 1900.

Patients in hospital December 4, 1899	20
Patients received up to June 2, 1900	30

Counties from which patients came who were admitted during six months:

Santa Fe County	9
Bernalillo County	12
San Miguel County	4
Socorro County	2
Colfax County	3
Total	30

Supplies purchased to June 2, 1900, and cost of same.

Items.	January.	February.	March.	April.	May.	June.	Total.
Groceries	$114.59	$70.87	$128.65	$134.56	$62.67	$122.08	$633.42
Bread	23.86	25.00	24.00	25.00	23.50	24.50	145.86
Butter	25.60	25.53	24.25	24.75	22.20	24.75	147.08
Water	10.00	10.00	10.00	10.00	10.00	10.00	60.00
Coal and freight	74.25	68.48	....	....	62.00	....	204.73
Meat	....	56.22	68.50	60.20	56.68	64.42	306.02
Coal oil	11.50	11.50	11.50	5.75	5.75	5.75	51.75
Milk	30.50	30.00	30.00	30.00	35.00	30.00	185.50
Drugs	19.80	....	13.20	13.59	32.30	28.60	107.49
Poor funerals	....	12.50	....	6.25	....	....	18.75
Total	310.10	310.10	310.10	310.00	310.10	310.10	1,860.60

Receipts and expenditures of St. Vincent Hospital from December 4, 1899, to June 2, 1900.

Receipts.		Expenditures.	
From Territorial appropriation	$1,860.60	Groceries	$633.42
		Bread	145.86
		Butter	147.08
		Water	60.00
		Coal and freight	204.73
		Meat	306.02
		Coal oil	51.75
		Milk	185.50
		Drugs	107.49
		Poor funerals	18.75
Total	1,860.60	Total	1,860.60

Report of St. Vincent Hospital, Santa Fe, N. Mex., from December 4, 1899, to June 2, 1900.

Patients in hospital December 4, 1899	20
Patients received to June 2, 1900	30
Patients discharged to June 2, 1900	28
Patients died to June 2, 1900	4
Patients in hospital June 2, 1900	18
Days to June 2, 1900	4,034
Prescriptions filled to June 2, 1900	140

Diseases treated.

Paralysis	1
Atrophy spinal cord	2
Palsy and debility	1
Eyes burned in mine explosion	1
Cataract	1
Chronic rheumatism	2
Bright's disease	1
La grippe	1
Broken back	1
Mashed hand	2
Optic neuritis (blind)	1
Bruised foot	1
Varicose veins	1
Stomach trouble	1
Debility (old age)	1
Cancer of face	2
Fracture of spine	1
Compound fracture of wrists and thigh	1
Pulmonary tuberculosis	7
Typhoid pneumonia	1
Dislocated hip	1
Cold from exposure	1
Mashed fingers	3
Bilious fever	1
Inflamed leg	1
Inflammatory rheumatism	3
Suppurating pleurisy	1
Alcoholism	1
Sore feet	1
Sore arm	1
Bronchitis	1
Abscess of groin	1
Catarrh of stomach	1
Partial paralysis	1
Burned by electricity	1
General debility (old age)	1
Total	50

Report of St. Vincent Hospital for the fiftieth fiscal year, from March 5, 1899, to December 2, 1899.

Patients in hospital March 4, 1899	19
Received during the year	55

Counties from which patients came who were admitted during nine months:

Santa Fe County	28
Bernalillo County	19
San Miguel County	6
Colfax County	2
Total	55

Supplies purchased during the year and cost of same.

Items.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Groceries	$60.39	$178.54	$133.65	$184.75	$142.60	$128.33	$81.68	$131.63	$75.32	$1,116.89
Bread	24.00	20.00	18.00	20.25	20.70	22.75	21.00	22.75	22.75	192.20
Butter	18.58	......	......	16.00	12.80	24.52	22.54	22.55	24.53	136.47
Water	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	90.00
Coal and freight	77.68	......	62.30	......	......	......	62.78	......	64.45	267.21
Meat	50.00	59.41	52.65	55.60	65.75	62.50	65.75	67.82	65.45	544.93
Coal oil	5.25	5.25	5.25	5.25	5.25	5.25	5.25	10.50	5.50	52.75
Alfalfa	54.25	......	......	......	......	......	......	......	......	54.25
Milk	......	......	......	......	25.00	23.45	25.50	29.35	21.25	124.55
Drugs	15.00	18.15	15.75	12.00	21.75	20.80	15.60	15.50	20.85	155.40
Poor funerals	......	18.75	12.50	6.25	6.25	12.50	......	......	......	56.25
Total	310.10	310.10	310.10	310.10	310.10	310.10	310.10	310.10	310.10	2,790.90

Financial statement.

Receipts.		Expenditures.	
Territorial appropriation	$2,790.90	Groceries	$1,116.89
		Bread	192.20
		Butter	136.47
		Water	90.00
		Coal and freight	267 21
		Meat	544.93
		Coal oil	52.75
		Alfalfa	54.25
		Milk	124.55
		Drugs	155.40
		Poor funerals	56.25
Total	2,790.90	Total	2,790.90

Diseases treated.

Paralysis	4	Rheumatism	2
Atrophy spinal cord	1	Ulcerated finger	1
Palsy and debility	1	Mashed hand	1
Cripple for life	1	Debility from pneumonia	1
Optic neuritis (blind)	1	Burned hands	1
Eyes burned in mine explosion	1	Mashed toe	1
Cataract	1	Dropsy	1
Chronic rheumatism	1	Acute rheumatism	1
Asthma	1	Both legs cut off in railroad accident	1
Frozen feet	1	Dysentery	1
Debility	3	Mashed fingers	1
Pulmonary tuberculosis	12	Bruised foot	2
Bright's disease	2	Bruised ankle	1
Sprained ankle	1	Blood poison	1
Compound fracture and diseased bone	1	Varicose veins	1
La grippe	1	Stomach trouble	1
Lead poison	1	Debility (old age)	1
Malarial fever	3	Liver trouble	1
Broken back	1	Head cut by falling brick	1
Injured knee	1	Typhoid pneumonia	1
Chronic dysentery	2	Cancer of face	1
Muscular rheumatism	1	Fracture of spine	2
General debility	3	Mountain fever	2
Gunshot wound in foot	1		
Chronic ulcer on leg	1	Total	74

Report of St. Vincent Hospital, for the fiftieth fiscal year ended December 2, 1899.

Patients in hospital March 5, 1899	19
Patients received during the year	55
Patients discharged during the year	44
Patients died during the year	10
Patients remaining in hospital December 2, 1899	20
Total number of days	4,768
Number of prescriptions filled	158

NEW MEXICO INSANE ASYLUM.

Las Vegas, N. Mex., *June 1, 1900.*

Sir: We take pleasure in handing you herewith statement of condition of the New Mexico Insane Asylum for the past year, as shown by the reports of the medical superintendent and steward.

As shown by the report of the medical superintendent, the average number of patients taken care of has been 92, as compared with 77 for the preceding year.

The male department is now accommodating patients up to about its full capacity, and steps should be taken at an early date by our legislature to enlarge our present quarters if the insane of our Territory are to have treatment given them equal to that given by our sister States and Territories.

In our opinion the plan that should be adopted is one that would result in all of the present quarters or wards being turned over entirely to the male department, and a new building erected for the women at a reasonable distance from the men's quarters.

It is a matter of more or less inconvenience, to say the least, to have both sexes in the same building, and more of a difficult matter to handle the patients than if the sexes were kept in separate buildings, as is now the case in about all of the asylums of the United States.

In our report last year we referred to the fact of the legislature having increased our levy to 1 mill. On the strength of this we have ventured to partially overhaul our administration building and build ourselves a brick kitchen, the total cost of all this work being about $2,700.

These improvements were so very badly needed that we thought it best to make this expenditure, believing we could see our way clear to save this from our levy by the last of this year.

We respectfully refer you to the following reports of our medical superintendent and steward for more detailed information.

J. W. Zollars,
Marcus Brunswick,
O. L. Gregory,
Nicolas T. Cordova,
Directors.

Hon. Miguel A. Otero,
Governor of New Mexico.

INSANE ASYLUM.

East Las Vegas, N. Mex., *June 1, 1900.*

Sirs: Your superintendent begs leave to make the following report for the year ending May 31, 1900:

The number of patients remaining in the asylum May 31, 1899, was 90. During the year there have been 30 admissions.

A total of 120 patients have been treated during the year. The average daily attendance for the year has been 92. The number of discharges has been 21, as follows:

Recovered	8
Improved	1
Unimproved	3
Died	9
Total	21

The causes of death have been as follows:

Maniacal exhaustion	4
Inanition	2
Ptomaine poisoning	1
Pneumonia	1
Pernicious anæmia	1
Total	9

The total number of patients remaining in the institution May 31, 1900, were 99, of which 58 were males and 41 were females, classified as follows:

Acute mania	5
Chronic mania	26
Dementia	59
Epileptic insanity	6
Insanity of adolescence	2
Moral insanity	1
Total	99

By referring to the above table you will notice that there has been but little change in the class of patients compared with my last report, excepting that a larger proportion of them are incurable, most of them having been so before admission to the institution.

Excepting an epidemic of grippe during the month of April, in which one patient died of pneumonia, the health of the inmates has been very good during the year just passed.

Though the number of patients allowed each county was doubled in August, 1898, since then the quota of many counties has been filled mostly by chronics and incurables, leaving but little or no room for recent cases, and it is from the latter class of patients that we may reasonably expect a very large per cent of recoveries if placed early under favorable surroundings and appropriate treatment. Of the patients remaining in this institution May 31, 1900, about 86 per cent may be classed as incurable.

While the year just passed has witnessed improvements in and about the institution, we must not be unaware of the fact that we have not yet reached that degree of perfection which we would desire. Many things remain to be done; many anticipations to be realized. The one thing we should keep prominently in view is that this is a hospital for the treatment of the insane rather than a home for the accommodation of incurables. There being a limited amount of room, we should at least limit the number to be admitted of those that are manifestly hopeless. If there were sufficient room it would not be necessary or desirable to deny admission to any, but as there is not, these discriminations should be made in favor of recent and presumably curable cases. If this discrimination is not made, in a very short time the hospital will be entirely filled with chronics and incurables, and then those who might be benefited by hospital residence and treatment will be permanently excluded, and they in turn swell the already too large number of the most pitiable of human beings. This policy would in individual cases seem to work a hardship, but when considered from the broad view of accomplishing the greatest amount of good for the very limited amount of money at our disposal, it must be considered as correct and should be adopted.

Besides the improvement in building there has been much work done on the yard and garden in grading and terracing, a system of sewerage, planting of fruit and shade trees, as well as of shrubbery and many flowers of different varieties, most of the labor having been done by the patients, all of which has afforded healthful occupation to a number of the inmates, besides lending a more attractive appearance to the grounds and comfort to the unfortunates; and the garden has afforded a great abundance of delicious vegetables, which have materially reduced the cost of maintenance of the institution. Not only have the patients been employed by outside work, but they have been occupied also inside by sweeping, scrubbing, doing dining-room and laundry work. The female patients have been engaged in household duties, sewing, and fancy work, according to individual capacity. At all times much care is observed not to overtax any patient.

Much the greater number of patients are idle, because their mental and physical condition renders them incapable of doing any kind of work. When the weather permits, the inmates are allowed a daily walk outside the hospital grounds, and every month dancing, music, and other entertainments are allowed, much to the enjoyment of the patients.

The present available room, principally in the new addition, will accommodate about 100 persons, and 20 more may be afforded adequate quarters as soon as we have the old building renovated. The old building, known as the "administration" building, is now almost uninhabitable because of its being out of repair. For about five years this part of the institution was very much overcrowded, literally filled from cellar to attic, and during this period but little repairing was possible. The floors, doors, and much of the other woodwork must be put in new, partition walls changed, almost if not all of the building must be replastered, fixtures and plumbing in great part replaced in toilet and bath rooms. Many changes and repairs and renovations are most urgently needed to meet the present demand.

During the meeting of our last legislature strenuous efforts were made to secure a special appropriation sufficient to make the above-mentioned repairs, but, I am sorry to say, we were disappointed.

We have at present about 6 acres in garden and 3 acres in alfalfa, cared for by some of the few male patients capable of doing manual labor, the returns of which make a very noticeable reduction in our running expenses. We are now feeling, more than ever before, the lack of sufficient land for garden and farming purposes, and will feel this need still more in the early future. If an additional tract of land, under irrigation, though small, could be placed at our disposal, enough could be produced at a very slight expense to keep many hogs, poultry, and more milch cows, and beef might be grown and fattened, which would further diminish the running expenses of the plant.

I will presume to suggest that measures be taken to secure not less than 60 acres more land under ditch.

Very respectfully,

W. R. TIPTON,
Medical Superintendent.

The BOARD OF DIRECTORS OF THE NEW MEXICO INSANE ASYLUM.

LAS VEGAS, N. MEX., *May 14, 1900.*

DEAR SIR: I have the honor to submit the following report of the transactions of the department under my charge of the Territorial Insane Asylum from May 1, 1899, to April 30, 1900:

The Territorial Insane Asylum has about 19 acres of land, 8 of which are being used in the cultivation of a vegetable garden, 3½ acres in alfalfa, the remainder being used for parks and pasture.

About 200 shade trees, taken from the nursery, 50 fruit trees, 24 ornamental trees (East India ash), and 24 flowering shrubs have been set out on the grounds.

Garden and live-stock products for the year amounted to $2,263.60. During the year we have, with the labor of patients, constructed an artificial lake, from which we irrigate 3 acres of alfalfa. We also have one-half acre of Turkestan alfalfa, the seed having been furnished us by the Department of Agriculture, Washington, D. C. This alfalfa grows on the driest land without irrigation. It is my opinion that this particular kind of alfalfa will grow on the driest mesas of this Territory without irrigation.

The new kitchen and bake oven are now about complete and ready for use—a great improvement over the old.

A carpenter shop has been fitted up in the basement of the south wing, in which much work is being done by the patients, both in repairs and in manufacturing articles for use in the institution.

A contract has been let for the sinking of a well 400 feet unless a sufficient flow of water be struck sooner. The well is down about 300 feet, having struck water at about 100 feet, but not in sufficient quantity to supply the institution. Should we succeed in striking a sufficient flow to supply the institution, our annual expense will be reduced $450.

It is impossible to mention the large number of small improvements and repairs that have been made to improve the place and add to the comfort and convenience of the patients and employees.

Respectfully submitted.

G. W. WARD, *Steward.*

The PRESIDENT OF THE BOARD OF DIRECTORS,
INSANE ASYLUM OF NEW MEXICO.

JUDICIAL AFFAIRS.

SANTA FE, N. MEX., *July 17, 1900.*

SIR: In compliance with your request for information regarding the business of the supreme court of the Territory of New Mexico, and of the New Mexico Bar Association, I have the honor to respectfully submit the following statement:

SUPREME COURT.

At the date of my last report to you the court then had several cases under advisement, nearly all of which, and also most of the cases filed and heard since then, have been finally determined, as will be seen below.

At the beginning of the fiscal year just ended the status of the docket of this court was as follows:

Number of cases under advisement	22
Continued to the regular term	3
Cases to be heard at August 28, 1899, adjourned session	3
New cases filed during the fiscal year	58
Total	86

The number of cases above enumerated were brought into this court as follows, to wit:

From the first judicial district court—		
By appeal	3	
By writ of error	1	
		4
From the second judicial district court—		
By appeal	31	
By writ of error	12	
		43
From the third judicial district court—		
By appeal	4	
By writ of error	1	
		5

From the fourth judicial district court—		
By appeal	7	
By writ of error	7	
		14
From the fifth judicial district court—		
By appeal	11	
By writ of error	9	
		20
Total		86

The status of the docket of this court at the close of the fiscal year was as follows, showing the disposition and standing of the cases above referred to:

Finally determined, by affirmance	27
Finally determined, by dismissal	6
Reversed, with instructions to the lower court to grant a new trial	7
Reversed, with instructions to the lower court to dispose of said cases in accordance with opinion	5
Under advisement by the court	35
Under advisement by the court upon motion only	3
Continued to the next regular term	1
Returnable to next regular term	2
Total	86

Of the cases finally determined by the court by affirmance, motions of rehearing have been filed in three cases and the court has not as yet passed on said motions, and two of the said cases have been taken to the Supreme Court of the United States by appeal.

The court at the last regular session heard all the cases then on the docket and has disposed of the greater part of them, as shown above.

The court, by rule, has fixed the first day of each regular term for the examination and admission of all applicants for admission to the bar of this court, and out of the 25 applicants then awaiting action by the committee, 24 have been admitted, 1 not appearing, owing to illness.

The next regular term of this court will begin on the first Wednesday after the first Monday in January, which will be Wednesday, the 9th day of January, 1901, and the court will then meet at its permanent quarters in the new capitol building, where it is now domiciled.

THE BAR ASSOCIATION.

The New Mexico Bar Association was organized January 6, 1886, and has met annually since, at the same time as the supreme court, which always adjourns on the first day of the term in order to allow the association to use its rooms for its meetings.

This association has been a working body from its inception, not given to banquets or celebrations of any kind, the only exception being at its last session, in January, 1900, when it gave an elaborate banquet in honor of Hon. H. D. Estabrook, of the Chicago bar, who came to Santa Fe expressly to address the association and delivered a masterly oration on "The New Mexico lawyer, his duties and opportunities," which was also a strong argument for the admission of New Mexico as a State; and at every meeting it has accomplished something tangible for the good of the people and the advancement of the profession.

It has twice, by request of the supreme court, prepared the rules of practice for that court and the district courts, including the rules for admission to the bar, which are similar to the Illinois statute, requiring an oral examination as well as written before the supreme court when in session. The examination is conducted by a committee of five appointed by the court—one from each judicial district; and these rules have proved very salutary during the three years they have been in operation.

At the request of the United States Court of Private Land Claims, it also prepared the rules of practice for that high tribunal.

This association also prepared the present Code of Civil Procedure, which was enacted into law in 1897 by the legislature without amendment and which has given almost universal satisfaction, as it has greatly expedited business and decreased the cost of litigation.

It has originated and recommended to the legislature a number of other bills that have become laws, and it is a noticeable fact that none of the laws so recommended have been amended or repealed.

This association is composed of 120 members, including all the justices of the supreme court and most of the former judges, as well as one of the justices of the new supreme court of the island of Porto Rico in the person of Hon. Luis Sulzbacher, who was one of its original members.

It is an organization of which the bench, bar, and people of the Territory are justly proud, and its printed minutes of proceedings are much sought after, as the committee on "Histories of the bench and bar" has collected with great care and after diligent effort many interesting facts of historical value relative to distinguished jurists who lived in New Mexico and assisted in shaping its laws after it became an American Territory in 1850. Edward L. Bartlett, the present solicitor-general, was mainly instrumental in forming this association, of which he was the first secretary, a position to which he has been annually elected since, and to his untiring efforts is due in a large degree the success and prosperity of the association.

Trusting that the above information regarding the supreme court of the Territory and its bar association will prove satisfactory, I remain, awaiting your further command,

Yours, most respectfully,

José D. Sena,
Clerk Supreme Court of New Mexico.

Hon. M. A. Otero,
Governor of New Mexico.

Clerk's Office, First Judicial District Court,
Santa Fe, N. Mex., July 23, 1900.

Sir: Responding to your favor of the 15th instant, in which you request a report of the transactions of this office for the fiscal year ending June 30, 1900, I beg leave to hand you the same herewith attached.

It may be noticed with a great deal of pride that the criminal business in this district has been decreasing considerably for the past two years, and it may be more especially noticed in the county of Santa Fe, wherein on the 1st day of July, 1898, 72 criminal cases were pending, while on the 1st day of July, 1899, there were but 27 cases pending, and on the 1st day of July, 1900, there were but 29 cases pending. The same amount of proportionate decrease may also be noticed in the other three counties of the district.

At the same time it may also be noticed that an unusual amount of new business on the criminal side of the docket has been instituted within the past fiscal year, but this is to be accounted for by the numerous indictments for the violation of the liquor and Sunday law. These, however, can not be construed as criminalities, but simply as misdemeanors, and when we have taken away the 193 cases of this class it will be seen readily that the real amount of criminal business in this district has diminished considerably.

The small number of cases that have been appealed to the supreme court of the Territory from this district (reference to which will undoubtedly be made by the clerk of the supreme court) will show the high integrity of this court, to which I beg to draw your attention with pleasure.

Trusting that this report may be satisfactory to you,

I remain, yours, very respectfully,

A. M. Bergère.

Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

Report of business transacted in the first judicial district court of the Territory of New Mexico, in and for the respective counties of Santa Fe, Taos, Rio Arriba, and San Juan, for the fiscal year ending June 30, 1900.

United States.

CIVIL.

Causes pending June 30, 1899	4
Causes filed from July 1, 1899, to June 30, 1900	1
Causes pending June 30, 1900	5

CRIMINAL.

Causes pending July 1, 1899	8
Causes filed from July 1, 1899, to June 30, 1900	5
Causes disposed of by dismissal	4
Causes disposed of by trial	5
Causes pending June 30, 1900	4

Territorial.

SANTA FE COUNTY.

CIVIL.

Causes pending July 1, 1899	157
Causes filed from July 1, 1899, to June 30, 1900	85
Causes disposed of by dismissal	66
Causes disposed of by trial and judgment	46
Causes pending June 30, 1900	130

CRIMINAL.

Causes pending July 1, 1899	27
Causes filed from July 1, 1899, to June 30, 1900	190
Causes disposed of by dismissal	97
Causes disposed of by trial	45
Causes disposed of by change of venue	46
Causes pending June 30, 1900	29

TAOS COUNTY.

CIVIL.

Causes pending July 1, 1899	30
Causes filed from July 1, 1899, to June 30, 1900	28
Causes disposed of by dismissal	17
Causes disposed of by trial and judgment	12
Causes pending June 30, 1900	29

CRIMINAL.

Causes pending July 1, 1899	21
Causes filed from July 1, 1899, to June 30, 1900	17
Causes disposed of by dismissal	20
Causes disposed of by trial	5
Causes pending June 30, 1900	13

RIO ARRIBA COUNTY.

CIVIL.

Causes pending July 1, 1899	29
Causes filed from July 1, 1899, to June 30, 1900	21
Causes disposed of by dismissal	17
Causes disposed of by trial and judgment	8
Causes pending June 30, 1900	25

CRIMINAL.

Causes pending July 1, 1899	19
Causes filed from July 1, 1899, to June 30, 1900	45
Causes disposed of by dismissal	29
Causes disposed of by trial	9
Causes pending June 30, 1900	26

SAN JUAN COUNTY.

CIVIL.

Causes pending July 1, 1899	16
Causes filed from July 1, 1899, to June 30, 1900	24
Causes disposed of by dismissal	6
Causes disposed of by trial and judgment	17
Causes pending June 30, 1900	17

CRIMINAL.

Causes pending July 1, 1899	11
Causes filed from July 1, 1899, to June 30, 1900	17
Causes disposed of by dismissal	10
Causes disposed of by trial	6
Causes pending June 30, 1900	12

RECAPITULATION.

CIVIL.

Causes pending July 1, 1899:

United States	4
Santa Fe County	157
Taos County	30
Rio Arriba County	29
San Jaun County	16
Total	236

Causes filed from July 1, 1899, to June 30, 1900:

United States	1
Santa Fe County	85
Taos County	28
Rio Arriba County	21
San Juan County	24
Total	159

Causes disposed of by trial and dismissal:

Santa Fe County	112
Taos County	29
Rio Arriba County	25
San Juan County	23
Total	189

Causes pending June 30, 1900:

United States	5
Santa Fe County	130
Taos County	29
Rio Arriba County	25
San Juan County	17
Total	206

CRIMINAL.

Causes pending July 1, 1899:

United States	8
Santa Fe County	27
Taos County	21
Rio Arriba County	19
San Juan County	11
Total	86

Causes filed from July 1, 1899 to June 1, 1900:

United States	5
Santa Fe County	190
Taos County	38
Rio Arriba County	45
San Juan County	17
Total	295

Causes disposed of by trial and dismissal:

United States	9
Santa Fe County (including change of venue)	190
Taos County	25
Rio Arriba County	38
San Juan County	16
Total	278

Causes pending June 30, 1900:	
United States	4
Santa Fe County	29
Taos County	13
Rio Arriba County	26
San Juan County	12
Total	84

ALBUQUERQUE, N. MEX., *July 24, 1900.*

SIR: In compliance with your request of July 15, I have the honor to submit the following report of business transacted in the second judicial district court of the Territory of New Mexico from July 1, 1899, to July 1, 1900:

DISTRICT COURT, BERNALILLO COUNTY.

Criminal cases pending on docket June 30, 1899		86
Criminal cases instituted during year ending June 30, 1900		116
		202
Disposed of:		
Convictions	48	
Acquittals	23	
Dismissals	77	
		148
Balance cases pending June 30, 1900		54
Civil actions pending June 30, 1899		314
Civil actions filed during year ending June 30, 1900		298
		612
Disposed of:		
Tried	200	
Dismissed	29	
		229
Balance cases pending June 30, 1900		383

DISTRICT COURT, VALENCIA COUNTY.

Criminal cases pending on docket June 30, 1899		18
Criminal cases instituted during year ending June 30, 1900		16
		34
Disposed of:		
Convictions	2	
Acquittals	2	
Dismissals	16	
		20
Balance cases pending June 30, 1900		14
Civil actions pending June 30, 1899		42
Civil actions filed during year ending June 30, 1900		27
		69
Disposed of:		
Tried	18	
Dismissed	8	
		26
Balance cases pending June 30, 1900		43

DISTRICT COURT (UNITED STATES), SECOND JUDICIAL DISTRICT.

Criminal cases pending June 30, 1899		2
Criminal cases instituted during year ending June 30, 1900		26
		28
Disposed of:		
Convictions	6	
Acquittals	5	
Dismissals	3	
		14
Balance cases pending June 30, 1900		14

Civil cases pending June 30, 1899:		
Chancery	2	
Law	9	
Bankruptcy	5	
		16
Civil cases instituted during year ending June 30, 1900:		
Law	2	
Bankruptcy:		
Voluntary	5	
Involuntary	1	
Other actions	1	
		9
Total		25
Disposed of, tried, etc		11
Balance cases pending June 30, 1900		14

Respectfully,

Harry P. Owen,
Clerk District Court, Second Judicial District, New Mexico.

Hon. M. A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

Business transacted in third judicial district during year ending June 30, 1900.

DONA ANA COUNTY.

Civil cases pending July 1, 1899	31
Civil cases filed from July 1, 1899, to June 30, 1900	61
	92
Disposed of	58
Balance pending July 1, 1900	34

Chancery cases pending July 1, 1899	6
New cases filed	0
	6
Disposed of	5
Balance pending July 1, 1900	1

Criminal cases pending July 1, 1899	34
Criminal cases filed from July 1, 1899, to June 30, 1900	88
	122
Disposed of	92
Balance pending July 1, 1900	30

GRANT COUNTY.

Civil cases pending July 1, 1899	60
Civil cases filed from July 1, 1899, to June 30, 1900	109
	169
Disposed of	87
Balance pending July 1, 1900	82
Chancery cases pending July 1, 1899	20
New cases filed	0
	20
Disposed of	5
Balance pending July 1, 1900	15
Criminal cases pending July 1, 1899	34
Criminal cases filed from July 1, 1899, to June 30, 1900	141
	175
Disposed of	129
Balance pending July 1, 1900	46

SIERRA COUNTY.

Civil cases pending July 1, 1899	4
Civil cases filed from July 1, 1899, to June 30, 1900	13
	17
Disposed of	8
Balance pending July 1, 1900	9
Chancery cases pending July 1, 1899	1
New cases filed	0
Balance pending July 1, 1900	1
Criminal cases pending July 1, 1899	35
New cases filed from July 1, 1899, to June 30, 1900	23
	58
Disposed of	35
Balance pending July 1. 1900	23

OTERO COUNTY.

Civil cases pending July 1, 1899	1
Civil cases filed from July 1, 1899, to June 30, 1900	36
	37
Disposed of	19
Balance pending July 1, 1900	18
Chancery	0
Criminal cases pending July 1, 1899	0
Criminal cases filed from July 1, 1899, to June 30, 1900	88
	88
Disposed of	34
Balance pending July 1, 1900	54

Statement of business done in the fifth judicial district for the fiscal year ending June 30, 1900.

Civil cases pending July 1, 1899:

United States	7
Socorro County	90
Lincoln County	68
Chaves County	20
Eddy County	65
Total	250

Civil cases docketed during year:

United States	15
Socorro County	56
Lincoln County	38
Chaves County	52
Eddy County	37
Total	198

Civil cases disposed of during year:

United States	7
Socorro County	59
Lincoln County	61
Chaves County	47
Eddy County	67
Total	241

Civil cases pending June 30, 1900:

United States	15
Socorro County	87
Lincoln County	45
Chaves County	25
Eddy County	35
Total	207

Criminal cases pending July 1, 1899:

United States	4
Socorro County	23
Lincoln County	27
Chaves County	30
Eddy County	37
Total	121

Criminal cases instituted during year:

United States	0
Socorro County	52
Lincoln County	17
Chaves County	94
Eddy County	68
Total	231

Criminal cases disposed of during year:

United States—		
Convictions	0	
Dismissals, etc	3	
		3
Socorro County—		
Convictions	24	
Dismissals, etc	23	
		47

Criminal cases disposed of during year—*Continued.*

Lincoln County—		
Convictions	0	
Dismissals, etc	28	
		28
Chaves County—		
Convictions	33	
Dismissals, etc	50	
		83
Eddy County—		
Convictions	18	
Dismissals, etc	54	
		72
Total		233

Criminal cases pending June 30, 1900:

United States	1
Socorro County	28
Lincoln County	16
Chaves County	41
Eddy County	33
Total	119

Total civil and criminal cases pending July 1, 1900:

United States	11
Socorro County	113
Lincoln County	95
Chaves County	50
Eddy County	102
Grand total	371

Total cases docketed during year:

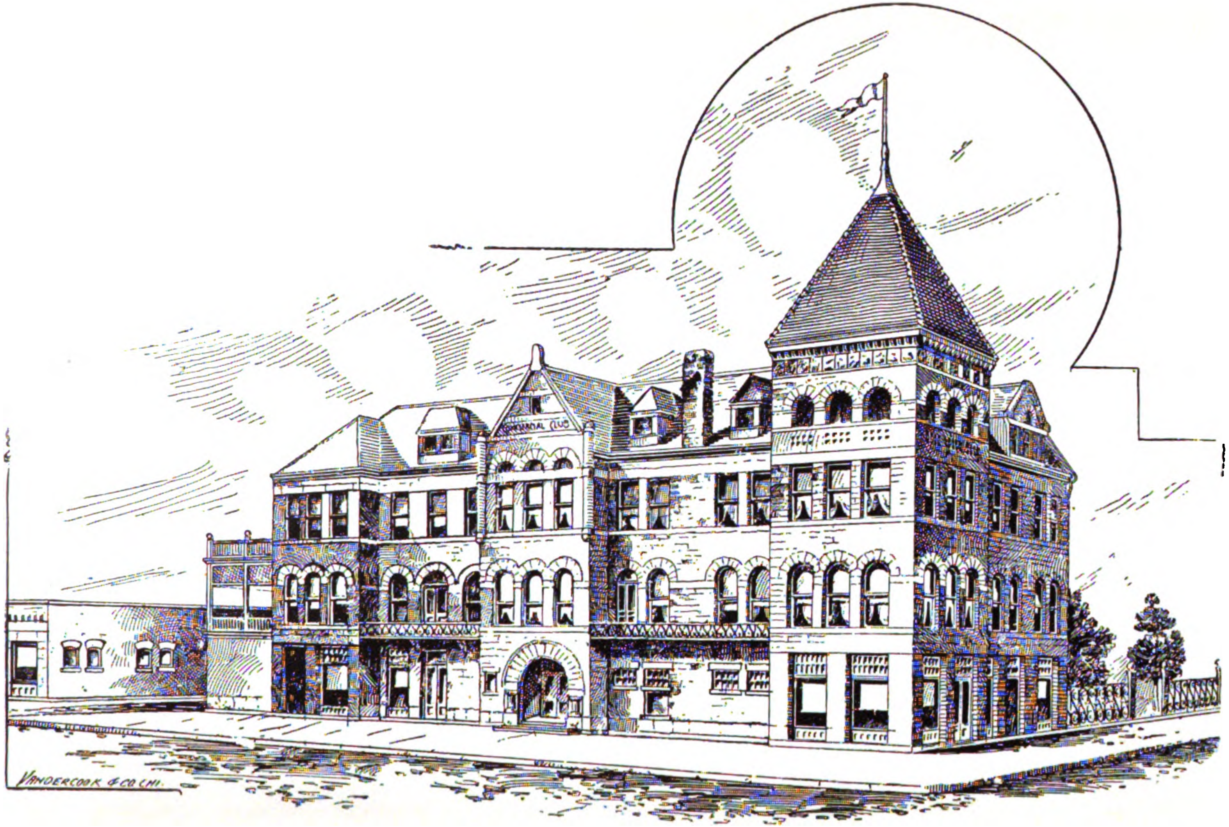
United States	15
Socorro County	108
Lincoln County	55
Chaves County	146
Eddy County	105
Grand total	429

Total civil and criminal cases disposed of during year:

United States	10
Socorro County	106
Lincoln County	89
Chaves County	130
Eddy County	139
Grand total	474

Total civil and criminal cases pending in the district June 30, 1900:

United States	16
Socorro County	115
Lincoln County	61
Chaves County	66
Eddy County	68
Grand total	326



COMMERCIAL CLUB, ALBUQUERQUE.

UNITED STATES COURT OF PRIVATE LAND CLAIMS.

Schedule No. 1.—*List of cases in New Mexico district decided by the Court of Private Land Claims from October 1, 1899 (the date of last report to the governor of New Mexico), to May 15, 1900.*

Private land claim No.	Name of grant.	Claimed.	Confirmed.	Rejected.
		Acres.	*Acres.*	*Acres.*
87	Sierra Mosca[1]	47,743	....	47,743
99-152-233	Petaca[1]	37,000	1,000	36,000
108	Cebolla[1]	27,000	....	27,000
112	Cuyamungue[1]	1,086	226	860
114[2]	San José del Encinal	12,207	....	12,207
144-252	San Pablo y Nacimiento	131,000	....	131,000
168	Santa Teresa	9,681	9,681	....
203-213	San Joaquin del Nacimiento	131,725	....	131,725
212	Pueblo de Quemado	288,000	....	288,000
227	José Ignacio Alari	1,000	....	1,000
228[2]	Roque Jacinto Jaramillo	10,000	....	10,000
257-263[3]	Bartolomé Trujillo or San José de Gracia	2,000	....	2,000
278	José de Leyba	18,000	....	18,000
	Total	716,442	10,907	705,535

[1] Rejected under mandate from Supreme Court of the United States.
[2] Confirmation declined because wholly within confirmed grant.
[3] Dismissed.

Schedule No. 2.—*Grant surveys approved in New Mexico district during same period.*

Private land claim No.	Name of grant.	Area in survey.
		Acres.
31	Luis Jaramillo	10,693.98
43	Polvadera	35,761.14
116	Talaya Hill	319.20
	Total	46,774.32

Schedule No. 3.—*Cases on docket of New Mexico district not finally disposed of; also status of each of said cases.*

A.—PENDING FOR PRIMARY DETERMINATION.

Private land claim No.	Name of grant.	Acreage claimed.	Remarks.
8	Town of Albuquerque	17,361	Remanded by Supreme Court (171 U.S., 685).
25-60-198	San Miguel del Bado	3,000	This represented estimate area of allotments to determine extent of which cause was remanded by Supreme Court (167 U.S., 278).
99-153-233	Petaca	1,000	Same as last. (See 175 U.S., 500.)
107	Cañon de Chama	2,736	Same as last. (See 167 U.S.)
211	Santo Domingo de Cundiyó	....	No estimate of acreage possible under description given.
215	Bishop's ranch	600	
260	Juan Joseph Moreno	....	Do.
262	Francisco Xavier Romero	....	Do.
270	Sitio de Navajo	....	Do.
279	Joaquin Mestas	3,682	
	Total	28,329	

B.—CASES TRIED AND SUBMITTED AND UNDER ADVISEMENT BY THE COURT IN NEW MEXICO DISTRICT.

Private land claim No.	Name of grant.	Area claimed.
109	Conejos (mostly in Colorado)	2,500,000

SCHEDULE No. 3.—*Cases on docket of New Mexico district not finally disposed of; also status of each of said cases*—Continued.

C.—GRANTS PENDING ON SURVEY IN NEW MEXICO DISTRICT.

Private land claim No.	Name of grant.	Estimated area confirmed.
5	Arroyo Hondo	20,171
15	Antonio Sedillo	86,606.21
16	Gijosa	15,540.97
17	Cañada de Santa Clara	1,348.03
24	Doña Ana Bend	29,323
55	Cevilleta	285,431.36
67	Felipe Tafoya	4,340
70	Las Lagunitas	43,653.03
74	Cañon de Carnué	1,000
75	San Mateo Spring	4,340
91 and 183	Juan Salas or Alamitos	500
122–148	Peñasco Largo	665
130–182	Ojo de San José	4,340
157	El Ranchito	8,000
179	Juan Bautista Valdez	1,200
205	Cañada de Cochiti	15,000
229	Angostura	2,319
264	Bartolomé Sanchez	5,000
267	Santa Rosa de Cubero	5,000
269–90	Las Huertas	20,000
272	Miguel and Santiago Montoya	2,600
273	Lo de Padilla	27,000
274	Antonio Gutierrez	12,000
275	Joaquin Sedillo	8,000
	Total	603,372.60

D.—CASES ON APPEAL FROM NEW MEXICO DISTRICT.

Private land claim No.	Name of grant.	Area claimed.	By whom appealed.
44–128–135–154–216	Las Animas	4,096,340	Claimants.
134–184–185	Santo Domingo and San Felipe	20,000	Do.
152	Estancia	415,036	Do.
	Total	4,531,376	

E.—GRANTS CONFIRMED, BUT CONFIRMATION NOT YET FINAL.

Private land claim No.	Name of grant.	Area confirmed.
137	Santo Tomas de Iturbide	6,680
138	José Manuel Sanchez Baca	4,340
149	Fernando de Taos	1,000
150–193	Refugio Colony	26,130
151	Mesilla Colony	17,361
168	Santa Teresa	9,681
194	Santa Cruz	1,000
	Total	66,192

RECAPITULATION.

	Number.	Area.
Cases not tried	10	28,329
Cases under advisement	1	2,500,000
Cases on survey	24	603,372.60
Cases on appeal	3	4,531,376
Cases, confirmation not final	7	66,192
Total pending in New Mexico district	45	7,729,269.60

UNITED STATES LAND OFFICES.

Abstract of business transacted at the United States land office at Santa Fe, N. Mex., during fiscal year ending June 30, 1900.

County.	Homesteads.	Desert lands.	Coal land.	Selections, act of June 4, 1897.	Territorial selections.	Total.
San Miguel	21,905			80	908	22,893
Colfax	19,850	360	160	160		20,530
Mora	15,652	1,436		260		17,348
Guadalupe	7,015	79		160		7,254
Santa Fe	1,818		320			2,138
Bernalillo	5,055	160	4,919	1,440		11,574
Rio Arriba	6,821					6,821
Taos	640			40		680
San Juan	4,058	1,715	160			5,933
Valencia	3,298			80		3,378
Socorro	1,680			320	1,058	3,058
Total	87,792	3,750	5,559	2,540	1,966	101,607

Statement of the business transacted at the United States land office at Clayton, N. Mex., for the fiscal year ending June 30, 1900.

Class of entries.	No.	Acres.	Commission.	Fees.	Total.
Excess payment on homestead and other locations and entries	38	89.57			$111.99
Original desert entries	5	801.41			200.35
Final desert entries	2	640			640.00
Homesteads converted to cash (Rev. Stat., 2301)	14	1,676.29			2,095.39
Sales, isolated tracts	4	240.47			300.59
Total	63	3,447.74			3,348.32
Original homestead entries	588	92,010.88	$3,450.53	$5,800.00	9,250.53
Final homestead desert entries	80	12,935.09	438.88		483.88
Final timber culture	1	120	4.00		4.00
Reservoir declarations	25		75.00		75.00
Testimony			330.95		330.95
Total all classes	757	108,513.71	4,344.36	5,800.00	13,492.68
Salary, fees, and commission of register and receiver					2,705.63
Expense of depositing public moneys					8.55
Incidental expenses					318.02
Total					3,032.20

Statement of the business transacted at the United States land office at Las Cruces, N. Mex., for the fiscal year ending June 30, 1900.

The amount of land sold or disposed of during year ... acres	254,900.05
Amount of money received and collected during year	$9,223
Number of homestead entries filed	252
Number of final homestead entries	106
Number of desert land entries	6
Mineral applications	14
Mineral entries	8
Cash entries	13

Respectfully submitted,

EMIL SOLIGNAC, *Register.*

Statement of business transacted at the United States land office at Roswell, N. Mex., for the fiscal year ending June 30, 1900.

Counties.	Area unappropriated and unsurveyed.			Reserved area.	Total area disposed of.	Total area of land district.	Land disposed of during fiscal year 1900.	Entered under homestead laws, 1900.
	Surveyed.	Unsurveyed.	Total.					
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Chaves	4,879,548	2,120,353	6,999,901	3,280	537,247	7,529,000	26,825	18,683
Eddy	1,798,435	2,253,741	4,052,176	6,300	269,402	4,320,000	10,118	7,998
Guadalupe	6,720	....	6,720	....	1,280	8,210	....	....
Lincoln	2,163,341	118,354	2,281,695	106,924	336,199	3,176,000	17,761	17,585
Otero	222,909	1,377,549	1,600,458	208,440	13,981	1,652,000	1,921	1,921
Valencia	145,040	....	145,040	....	12,800	158,000	....	....
Total	9,215,993	5,869,997	15,085,990	324,944	1,170,909	16,843,210	56,625	46,187

Respectfully submitted,

HOWARD LELAND, *Register*.
DAVID L. GEYER, *Receiver*.

TERRITORIAL FINANCES.

TERRITORY OF NEW MEXICO, OFFICE OF THE TREASURER,
Santa Fe, N. Mex., July 26, 1900.

SIR: I have the honor to submit to you a statement of the Territorial treasury at the end of the second quarter of the fifty-first fiscal year, June 2, 1900, with estimates of revenues and expenditures for the second half of the fifty-first fiscal year, ending December 1, 1900.

Estimating the expected revenue for the second half of the fifty-first fiscal year on a very conservative basis, the statement shows an expected surplus of $102,730.81 at the end of the fifty-first fiscal year, December 1, 1900.

In this connection it may not be amiss to compare this result with prior years:

Year.	Revenues.	Expenditures.
1893	$283,124.92	$355,683.27
1894	334,218.73	262,578.03
1895	237,976.56	330,528.82
1896	224,659.97	246,421.17
1897	236,678.25	295,318.84
1898	287,046.96	347,315.15

In his report December 1, 1894, to the governor the then treasurer, Hon. R. J. Palen, says:

"This statement shows that the balances on hand at the date of my first report, December 5, 1892, and the regular receipts of the past two years were ample to meet the appropriations of 1893 and 1894, the payment of which in full, as required, having been interrupted only by the locking up of $60,000 of Territorial funds in the suspended Territorial depository July 3, 1893, although at that time this was nearly half the Territorial cash balance on hand."

In his report December 3, 1898, to the governor the then treasurer, Hon. Samuel Eldodt, among other things, says the following:

"I respectfully call your attention to the importance of providing additional funds for the interest fund, which is now in arrears to the extent of $40,000, and will be at the close of the present fiscal year, on the first Monday of March, 1899, to the extent of $55,000, as shown by the following summary:

Treasurer's notes outstanding, given for loans to complete the payment of coupons	$28,000
Interest due up to date of this report	1,874
Interest due January 1, 1899	9,939
Interest due March 1, 1899	15,430
Total arrearage to close of fiscal year	55,243

"About $25,000 of this arrearage existed two years ago and the attention of the last legislature was called to the necessity of making some provision for its payment, but no action was taken. The remainder of the arrearage has arisen during the past two years from the failure of the cash receipts from taxation to equal the appropriations. * * * A tax of one-fourth of one mill will be ample to begin with and the rate can be reduced from year to year. It is of the utmost importance that this or some other provision be made for this fund, as it will not be possible for the treasurer much longer to take care of the coupons as they mature by the makeshift processes which have answered for the past four years."

Acting on this suggestion, the thirty-third legislative assembly passed an act (Chapter LIX) entitled "An act to provide for the payment of the deficiencies in the Territorial appropriations of the various fiscal years up to and including the forty-ninth fiscal year (H. B. 142)," approved March 16, 1899, under the provisions of which the Territory issued certificates of indebtedness bearing 6 per cent interest, redeemable one-fifth each year for the next five following years, viz:

Series A, to complete interest fund	$54,000
Series B, to provide for other deficiencies	69,000
Total	123,000

The statement submitted herewith shows that on or after March 1, 1900, $24,500 of these certificates were redeemed.

The Territory further bought $20,000 par value of capitol contingent fund bonds at 108 per cent at a cost of $21,600. There are still $30,000 of these bonds, due April 1, 1902, outstanding. In the capitol contingent fund there is to-day the sum of $14,046.80. A tax levy has been made this year to more than provide the balance of $15,953.20 needed to redeem the $30,000 still outstanding. A sufficient tax levy has also been made, beginning with this year, to provide for the ultimate redemption of $200,000 capitol building bonds, due one-half each September 1, 1904, and March 1, 1905.

By March 1, 1905, the reduction of the Territorial funded debt will be:

Capitol building bonds, 7 per cent	$200,000
Capitol contingent fund bonds, 6 per cent	50,000
Certificates of indebtedness, 6 per cent	123,000
Total	373,000

which represents a saving of $24,380 a year interest charges alone.

This most gratifying showing is the result of the wise and foresighted legislation of the last legislative assembly, by which for the first time in the history of the Territory its business is on a cash basis and all its obligations provided for, with no deficiencies to be met.

Very respectfully, your obedient servant,

J. H. Vaughn,
Territorial Treasurer.

Hon. Miguel A. Otero,
Governor of New Mexico.

Statement of the Territorial treasury at the end of the second quarter of the fifty-first fiscal year, June 2, 1900, with estimates of revenues and expenditures for the second half of the fifty-first fiscal year, ending December 1, 1900.

Arithmetical product of assessment for the year 1899		$476,848.02
Total appropriations for the fifty-first fiscal year		341,496.00
Total receipts for first half of fifty-first fiscal year		284,992.69
Total taxes collected first half fifty-first fiscal year (54.7 per cent of total assessment)		260,818.33
Total expenditures for the first half of the fifty-first fiscal year		273,409.82
Expended as follows:		
On regular appropriations	$178,583.64	
On sheep and cattle funds	8,474.36	
On certificates of indebtedness (note 1)	28,982.00	
On capitol contingent fund bonds bought (note 2)	20,000.00	
On capitol rebuilding fund	37,369.82	
		273,409.82

Statement of the Territorial treasury at the end of the second quarter of the fifty-first fiscal year, June 2, 1900, etc.—Continued.

Cash balance on hand June 2, 1900		$150,969.39
Less the following trust funds:		
Public-school fund	$7,534.05	
Cattle-indemnity fund	4,790.69	
Sheep sanitary fund	718.35	
Capitol contingent fund	12,152.73	
Total		25,195.82
Net available cash for unexpended appropriations		125,773.57
Unexpended appropriations to end of fifty-first fiscal year		162,912.36
Cash on hand now		125,773.57
Cash needed to meet appropriations on or before December 1, 1900		37,138.79
(See note 3, dated July 16, 1900.)		
Net cash on hand June 2, 1900, available for unexpended appropriations		125,773.57
Expected revenue for second half of fifty-first fiscal year, 20 per cent of assessment (all expected revenue from miscellaneous sources omitted)		95,369.60
		221,143.17
Less unexpended appropriations to December 1, 1900		162,912.36
Net surplus at the end of fifty-first fiscal year		58,230.81
Add reduction of funded debt:		
Redeemed certificates of indebtedness		24,500.00
Capitol contingent fund bonds bought		20,000.00
Total		102,730.81

estimated surplus at the end of fifty-first fiscal year.

(Note 1): Certificates of indebtedness—

Redeemed certificates of indebtedness	$24,500.00
Interest paid on certificates of indebtedness	4,482.00
Total	28,982.00

(Note 2): Capitol contingent fund bonds—

Bought $20,000 par value of capitol contingent fund bonds at 108 per cent	21,600.00
Premium of 8 per cent charged to interest account	1,600.00
Net reduction of debt	20,000.00

(Note 3, dated July 16, 1900):

Total taxes collected for first half of fifty-first fiscal year	260,818.33
Taxes collected from June 2, 1900, to July 16, 1900	49,667.15
Total	310,485.48

(An average of 65.11 per cent on total assessment for the first seven and one-half months of fifty-first fiscal year.)

The collections for the last ten years have averaged as follows:

	Per cent.
1889	72
1890	76
1891	67
1892	74
1893	61
1894	62
1895	50
1896	65
1897	50
1898 omitted, as the fiscal year comprised nine months only.	
Average	64⅛

From June 2, 1900, to July 16, 1900, the Territorial treasury has received, besides the taxes above mentioned, the following:

From miscellaneous sources	$5,632.51
From sources not subject to distribution	4,372.24

Receipts and expenditures for the fiftieth fiscal year, 1899, commencing March 6, 1899, and ending December 2, 1899 (9 months).

	Receipts.	Expenditures.
Licenses		$23.76
Miscellaneous fund		29,570.61
Compensation of assessors' fund	$7,487.19	8,268.14
Interest fund	65,008.65	106,645.86
Interest on deposits	2,188.80	409.71
Penitentiary current expense fund, forty-seventh fiscal year	2,493.33	11,984.52
Penitentiary current expense fund, fiftieth fiscal year	1,581.80	20,584.53
Territorial purposes, forty-seventh fiscal year	2,855.74	
Territorial purposes, fiftieth fiscal year	106,532.68	5,968.70
Sheep sanitary fund	1,345.16	1,400.00
Cattle indemnity fund	8,825.25	9,783.48
Capitol rebuilding fund	60,792.50	34,008.83
Capitol contingent sinking fund	7,342 19	
Special tax	18,414.93	28,526.47
Compilation fund	153.00	102.00
Salary fund	4,974.30	27,366.07
Supreme court fund		319.42
Special purposes, fifty-first fiscal year	39.44	
Charitable institutions, fifty-first fiscal year	28.76	
Interest and sinking fund, certificate of indebtedness	78.62	
Territorial purposes, fifty-first fiscal year	311.54	
Territorial institutions, fifty-first fiscal year	163.12	
Territorial institutions, forty-seventh fiscal year	839.72	
Territorial institutions, fiftieth fiscal year	29,700.00	41,250.56
Deficiency fund	2,475.00	10.00
Penitentiary convicts' earnings	1,664.13	
Transportation of convicts		257.81
Special court fund		1.90
Territorial purposes, forty-eighth fiscal year	561.01	352.71
Territorial institutions, forty-eighth fiscal year	163.71	
Territorial purposes, forty-ninth fiscal year	1,994.07	
Territorial institutions, forty-ninth fiscal year	453.19	
Total	328,467.33	326,855.08

List of banks holding Territorial funds.

Name of bank.	Amount applied for.	Amount of bond.	Balances June 9, 1900.
First National Bank, Santa Fe			$6,937.42
Bank of Commerce, Albuquerque	$28,000	$56,000	23,997.75
First National Bank, Las Vegas	30,000	60,000	25,916.47
First National Bank, Albuquerque	30,000	60,000	25,969.32
Taos County Bank, Taos	10,000	20,000	8,757.07
New Mexico Savings Bank and Trust Co., Albuquerque			781.19
San Miguel National Bank, Las Vegas	30,000	60,000	25,960.00
First National Bank, Raton	15,000	30,000	13,031.58
First National Bank, Roswell	15,000	30,000	12,892.57
National Bank of Commerce, New York			3,398.56
Total			147,641.93

Statement of the funded debt of the Territory of New Mexico, September 3, 1900.

Title of bond.	Amount outstanding.	Date of bond.	Rate of interest.	When interest is payable.	Where principal and interest are payable.	When principal is due.
			Per ct.			
Capitol-rebuilding bonds.	$100,000	Sept. 1, 1884	7	March and September.	National Bank of Commerce, New York.	Sept. 1, 1904
Do	100,000	Mar. 1, 1885	7	do	do	Mar. 1, 1905
Capitol contingent-fund bonds.	30,000	Apr. 1, 1887	6	January and July.	do	Apr. 1, 1902
Current-expense bonds.	50,000	May 2, 1887	6	May	do	May 2, 1907
Do	50,000	Nov. 1, 1887	6	November	do	Nov. 1, 1907
Do	50,000	May 1, 1888	6	May	do	May 1, 1908
Provisional indebtedness bonds.	100,000	May 1, 1889	6	March and September.	do	May 1, 1919
Do	100,000	Sept. 2, 1889	6	do	do	Sept. 2, 1919

Statement of the funded debt of the Territory of New Mexico, September 3, 1900—Cont'd.

Title of bond.	Amount outstanding.	Date of bond.	Rate of interest.	When interest is payable.	Where principal and interest are payable.	When principal is due.
			Per ct.			
Insane asylum bonds.	$25,000	Oct. 1, 1891	6	January and July.	National Bank of Commerce, New York.	Oct. 1, 1921
Casual-deficit bonds.	101,800	May 1, 1893	5	.....do	.....do	May 1, 1923
Refunding bonds	104,000	July 1, 1893	6	.....do	.....do	July 1, 1923
Penitentiary refunding bonds.	71,000	July 1, 1894	6	March and September.	.....do	July 1, 1924
Do	10,000	Jan. 1, 1895	6	.....do	.....do	Jan. 1, 1925
Territorial institutions bonds.	35,000	July 1, 1895	5	January and July.	.....do	July 1, 1925
New Mexico Military Institute bonds.	15,000	.....do	5	.....do	Western National Bank, New York.	Do.
Insane asylum bonds.	30,000	.....do	5	.....do	National Bank of Commerce, New York.	Jan. 1, 1925
Capitol-rebuilding bonds, first series	25,000	May 1, 1895	5	May and November.	.....do	May 1, 1925
Do	50,000	Nov. 1, 1895	5	.....do	.....do	Nov. 1, 1925
Capitol-rebuilding bonds, second series.	60,000	May 1, 1899	4	.....do	.....do	May 1, 1929
Certificate of indebtedness "A".	43,000	Mar. 1, 1899	6	March and September.	Territorial Treasury, Santa Fé.	Mar. 1, 1904
Certificate of indebtedness "B".	55,300	.....do	6	.....do	.....do	Do.
Total bonded indebtedness.	1,205,100					

List of fire insurance companies which have complied with chapter 49, laws of 1897.

Name of company.	Location.	Security.	
Firemen's Fund Insurance Co	San Francisco, Cal	$10,000	Certificate of deposit, First National Bank, Albuquerque.
North British and Mercantile Insurance Co.	London and Edinburg.	10,000	Territorial institution bonds.
Royal Insurance Co	Liverpool	10,000	Capitol contingent-fund bonds.
St. Paul Fire and Marine Insurance Co.	St. Paul, Minn	10,000	$3,000 Grant County current-expense bonds. $7,000 Grant County funding bonds.
American Central Insurance Co	St. Louis, Mo	10,000	Certificate of deposit, First National Bank, Las Vegas.
Insurance Company of North America.	Philadelphia, Pa	10,000	$2,000 provisional-indebtedness bonds. $8,000 Grant County funding bonds.
National Fire Insurance Co	Hartford, Conn	10,000	City of Silver City, N. Mex., gold-refunding bonds.
Ætna Insurance Co	.....do	10,000	Capitol-rebuilding bonds.
London and Lancashire Fire Insurance Co.	Liverpool	10,000	Grant County railroad bonds.
Scottish Union and National Insurance Co.	Edinburg	10,000	$5,000 certificate of deposit, San Miguel National Bank. $5,000 certificate of deposit, First National Bank, Albuquerque.
Hartford Fire Insurance Co	Hartford, Conn	10,000	Real-estate mortgage.
British America Assurance Co	Toronto, Canada	10,000	Do.
Atlas Assurance Co	London	10,000	$1,000 provisional-indebtedness bond. $6,000 casual-deficit bonds. $3,000 refunding bonds.
Liverpool, London and Globe Insurance Co.	Liverpool	10,000	$5,000 funding bonds, Socorro County. $5,000 funding bonds, Bernalillo County.
Niagara Fire Insurance Co	New York, N. Y	10,000	Provisional-indebtedness bonds.
Continental Insurance Co	.....do	10,000	Do.
Springfield Fire and Marine Insurance Co.	Springfield, Mass	10,000	Real-estate mortgage.
Fire Association of Philadelphia, Pa.	Philadelphia, Pa	11,000	Do.

List of fire insurance companies which have complied with chapter 49, laws of 1897—Cont'd.

Name of company.	Location.	Security.	
Northern Assurance Co	London	$10,000	Certificate of deposit, First National Bank, Santa Fe. N. Mex.
Palatine Insurance Co., Limited	Manchester, England.	10,000	Real-estate mortgage.
Orient Insurance Co	Hartford, Conn	10,000	$5,000 certificate of deposit, First National Bank, Las Vegas, N. Mex. $5,000 real-estate mortgage.
Norwich Union Fire Insurance Society.	Norwich, England	10,000	$5,000 capitol contingent-fund bonds. $5,000 capitol-rebuilding bonds.
		221,000	

Quarterly statement of the Territorial treasurer of New Mexico, second quarter of the fiftieth fiscal year, beginning June 4, 1899, and ending September 2, 1899.

Title of fund or account.	Balances June 4, 1899.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Sept. 2, 1899.
Miscellaneous fund:						
Forty-second fiscal year	$56.00					$56.00
Forty-third fiscal year	37.50					37.50
Forty-seventh fiscal year	5.00					5.00
Fiftieth fiscal year	10,909.99		$16,712.99		$13,129.96	14,493.02
Compensation of assessors' fund:						
Forty-second fiscal year	7.85					7.85
Fiftieth fiscal year	1,298.53	$5,300.32			3,326.21	3,272.64
Deficit fund, forty-second fiscal year	154.60					154.60
Deficiency fund, fiftieth fiscal year		2,475.00			10.00	2,465.00
Interest fund		11,008.65	26,274.03		40,688.95	33,593.73
Proceeds 37 certificates of indebtedness		37,000.00				
Interest on deposits	566.88	522.73			134.75	954.86
University of New Mexico	975.03		3,167.69		2,731.13	1,411.59
Agriculture College	640.90		2,111.79		640.90	2,111.79
New Mexico School of Mines	640.90		2,111.79		640.90	2,111.79
New Mexico Insane Asylum	2,403.39		7,919.24		6,793.64	3,528.99
New Mexico Military Institute	733.75		2,111.79		1,900.00	945.54
Normal School, New Mexico (Silver City)	640.90		2,111.79		640.90	2,111.79
Normal School, New Mexico (Las Vegas)	640.90		2,111.79		1,811.63	941.06
Penitentiary current-expense fund:						
Forty-seventh fiscal year		768.97			68.50	700.47
Fiftieth fiscal year	7,309.42		16,336.58		10,258.39	15,051.74
Convicts' earnings		859.38				
Support United States prisoners		804.75				
Territorial purposes, forty-seventh fiscal year		1,600.76		$1,600.76		
Territorial purposes, fiftieth fiscal year		76,349.87	1,600.76	75,283.77		2,666.86
Sheep sanitary fund	666.09	811.37			1,400.00	77.46
Cattle-indemnity fund	866.65	5,698.28			2,892.88	3,672.55
Capitol-rebuilding fund	9,034.71				12,354.04	57,473.17
Proceeds 60 bonds		60,792.50				
Territorial institutions, forty-seventh fiscal year		468.70		468.70		
Territorial institutions, fiftieth fiscal year		21,980.14	468.70	21,645.88		802.96
Capitol contingent sinking fund	16,584.16	5,330.49				21,914.65
Special tax	4,911.65	13,452.06			14,861.82	3,501.89
Compilation fund	59.50	51.00				110.50
Salary fund	11,727.62	1,625.85	15,734.81		9,676.81	19,410.97
Supreme court fund	357.55		225.86		88.90	494.51
Special court fund	1,245.71					1,245.71
Total	72,475.18	246,900.82	98,999.11	98,999.11	124,049.81	195,326.19

Quarterly statement of the Territorial treasurer of New Mexico, etc.—Continued.

RECAPITULATION.

Balances June 3, 1899	$72,475.18
Receipts during quarter	246,900.82
Total to be accounted for	319,376.00
Payments during quarter	124,049.81
Balances September 2, 1899	195,326.19

DISPOSITION OF FUNDS.

First National Bank of Santa Fe	$44,522.93
Bank of Commerce, Albuquerque	2,330.24
First National Bank of Las Vegas	29,937.11
First National Bank of Albuquerque	29,923.28
Taos County Bank	9,914.55
New Mexico Savings Bank and Trust Co	1,583.28
First National Bank of Raton	14,953.07
The Bank of Roswell	14,940.13
National Bank of Commerce of New York	17,260.60
San Miguel National Bank, Las Vegas	29,961.00
Total	195,326.19
Funds not available	1,583.28
Funds available	193,742.91
Deduct interest due	28,260.60
Free cash balance	165,482.31

Quarterly statement of the Territorial treasurer of New Mexico, third quarter of the fiftieth fiscal year, beginning September 4, 1899, and ending December 2, 1899.

Title of fund or account.	Balances Sept. 4, 1899.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Dec. 2, 1899.
Miscellaneous fund:						
Forty-second fiscal year	$56.00					$56.00
Forty-third fiscal year	37.50					37.50
Forty-seventh fiscal year	5.00					5.00
Fiftieth fiscal year	14,493.02		$2,342.26		$8,018.71	8,816.57
Compensation of assessors' fund:						
Forty-second fiscal year	7.85					7.85
Fiftieth fiscal year	3,272.64	$523.98			2,246.54	1,550.08
Deficit fund, forty-second fiscal year	154.60					154.60
Deficiency fund, fiftieth fiscal year	2,465.00					2,465.00
Interest fund	33,593.73	17,000.00	3,682.20		32,303.70	21,972.23
Interests on deposits	954.86	991.91				1,946.77
University of New Mexico	1,411.59		430.46		1,400.00	442.05
Agriculture College	2,111.79		286.98		2,111.79	286.98
New Mexico School of Mines	2,111.79		286.98		2,111.79	286.98
New Mexico Insane Asylum	3,528.99		1,076.13		4,391.97	213.15
New Mexico Military Institute	945.54		286.98			1,232.52
Normal School, New Mexico (Silver City)	2,111.79		286.98		2,111.79	286.98
Normal School, New Mexico (Las Vegas)	941.06		286.98		1,171.99	56.05
Penitentiary current expense fund:						
Forty-seventh fiscal year	700.47	474.05		$1,174.52		
Fiftieth fiscal year	15,051.74	1,581.80	3,607.27		10,326.14	9,914.67
Territorial purposes, forty-seventh fiscal year		701.94		701.94		
Territorial purposes, fiftieth fiscal year	2,666.86	7,325.16	701.94	10,693.96		
Sheep sanitary fund	77.46	158.84				236.30
Cattle indemnity fund	3,672.55	2,254.32			3,584.04	2,342.83
Capitol rebuilding fund	57,473.17				12,046.38	45,426.79
Territorial institutions, forty-seventh fiscal year		208.83		208.83		
Territorial institutions, fiftieth fiscal year	802.96	1,929.70	208.83	2,941.49		
Capitol contingent sinking fund	21,914.65	491.38				22,406.03
Special tax	3,501.89	1,156.57			897.60	3,760.86
Compilation fund	110.50	34.00				144.50
Salary fund	19,410.97	2,067.50	2,205.10		10,638.69	13,044.88
Supreme court fund	494.51		31.65		100.00	426.16
Special court fund	1,245.71					1,245.71

Quarterly statement of the Territorial treasurer of New Mexico, etc.—Continued.

Title of fund or account.	Balances Sept. 4, 1899.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Dec. 2, 1899.
Special purposes, fifty-first fiscal year		$39.44				$39.44
Charitable institutions, fifty-first fiscal year		28.76				28.76
Interest and sinking fund, certificate of indebtedness fifty-first fiscal year		78.62				78.62
Territorial purposes, fifty-first fiscal year		311.54				311.54
Territorial institutions, fifty-first fiscal year		163.12				163.12
Total	$195.326.19	37,521.46	$15,720.74	$15,720.74	$93,461.13	139,386.52

RECAPITULATION.

Balances September 4, 1899	$195,826.19
Receipts during quarter	37,521.46
Total to be accounted for	232,847.65
Disbursements during quarter	93,461.13
Balances December 2, 1899	139,386.52

DISPOSITION OF FUNDS.

First National Bank of Santa Fe	9,749.15
Bank of Commerce, Albuquerque	2,347.75
First National Bank of Las Vegas	28,163.18
First National Bank of Albuquerque	28,142.31
Taos County Bank	10,012.54
New Mexico Savings Bank and Trust Company	1,583.28
San Miguel National Bank, Las Vegas	28,183.00
First National Bank of Raton	14,065.24
First National Bank of Roswell	14,037.27
National Bank of Commerce of New York	3,102.80
Total	139,386.52
Funds not available	1,583.28
Funds available	137,803.24
Deduct interest due January 1, 1900	9,939.79
Free cash balance	127,863.45

Quarterly statement of the Territorial treasurer of New Mexico, first quarter of the fifty-first fiscal year, beginning December 4, 1899, and ending March 3, 1900.

Title of fund or account.	Balances Dec. 4, 1899.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Mar. 3, 1900.
Miscellaneous fund:						
Forty-second fiscal year	$56.00					$56.00
Forty-third fiscal year	37.50					37.50
Forty-seventh fiscal year	5.00					5.00
Fiftieth fiscal year	8,816.57			$1,000.00	$2,596.79	5,219.78
Fifty-first fiscal year			$12,876.34		3,794.31	9,082.03
Compensation of assessors' fund:						
Forty-second fiscal year	7.85					7.85
Fiftieth and fifty-first fiscal years	1,550.08	$10,249.29			9,041.35	2,758.02
Deficit fund, forty-second fiscal year	154.60					154.60
Deficiency fund, fiftieth fiscal year	2,465.00			1,500.00		965.00
Interest fund	21,972.23		44,286.56		10,660.00	55,598.79
Interest on deposits	1,946.77	980.40		357.25		2,569.92
University of New Mexico	442.05		9,246.37		6,761.54	2,926.88
University of New Mexico, Hadley fund			924.62			924.62
Agricultural College	286.98		3,729.38		2,835.84	1,180.52
New Mexico School of Mines	286.98		5,085.50		3,762.70	1,609.78
New Mexico Insane Asylum	213.15		18,533.84		12,877.24	5,869.75
New Mexico Military Institute	1,232.52		5,085.50		3,808.24	2,509.78
Normal School, New Mexico (Silver City)	286.98		5,085.50		3,762.70	1,609.78
Normal School, New Mexico (Las Vegas)	56.05		6,498.14		4,497.25	2,056.94

Quarterly statement of the Territorial treasurer of New Mexico, etc.—Continued.

Title of fund or account.	Balances Dec. 4, 1899.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances Mar. 3, 1900.
Penitentiary current expense fund:						
Fiftieth fiscal year	$9,914.67			$8,018.76	$1,895.91	
Fifty-first fiscal year		$314.50	$14,456.40		9,851.52	$4,919.38
Penitentiary maintenance fund, fifty-first fiscal year			20,200.88		7,658.14	12,542.74
Penitentiary convicts' earnings fifty-first fiscal year		1,119.68			266.44	853.24
Territorial purposes, forty-seventh fiscal year		327.66		327.66		
Territorial purposes, fiftieth fiscal year		4,134.88		4,134.88		
Territorial purposes, fifty-first fiscal year	311.54	106,219.78	4,462.54	110,993.86		
Sheep sanitary fund	236.30	1,804.76			1,463.02	578.04
Cattle indemnity fund	2,342.83	9,157.20			3,936.24	7,563.79
Capital rebuilding fund	45,426.79				14,688.24	30,738.55
Territorial institutions, forty-seventh fiscal year		95.06		95.06		
Territorial institutions, fiftieth fiscal year		1,087.99		1,087.99		
Territorial institutions, fifty-first fiscal year	163.12	55,152.37	1,190.09	56,505.58		
Territorial institutions, forty-sixth fiscal year		.71		.71		
Territorial institutions, forty-eighth fiscal year		1.85		1.85		
Territorial institutions, forty-ninth fiscal year		4.48		4.48		
Capitol contingent sinking fund	22,406.03	9,161.96				31,567.99
Special tax, fiftieth fiscal year	3,760.86	651.81			329.70	4,082.97
Compilation fund	144.50	8.50				153.00
Salary fund, fiftieth fiscal year	13,044.88	2,116.10			4,997.07	10,163.91
Salary fund, fifty-first fiscal year			26,749.52		4,614.16	22,135.36
Supreme court fund	426.16		443.98			870.14
Special court fund	1,245.71					1,245.71
Special purposes, fifty-first fiscal year	39.44	13,346.29				13,385.73
Charitable institutions, fifty-first fiscal year	28.76	9,793.25			1,479.59	8,342.42
Interest and sinking fund, certificate of indebtedness.	78.62	26,689.66	1,500.00		27,198.00	1,070.28
New Mexico deaf and dumb asylum			2,316.73		1,583.89	732.84
Militia fund			998.94		196.45	802.49
Capitol maintenance fund			357.25			357.25
Public school fund		4,904.38				4,904.38
Total	139,386.52	257,322.56	184,028.08	184,028.08	144,556.33	252,152.75

RECAPITULATION.

Balances Dec. 4, 1899	$139,386.52
Receipts during quarter	257,322.56
Total to be accounted for	396,709.08
Disbursements during quarter	144,556.33
Balances Mar. 3, 1900	252,152.75

DISPOSITION OF FUNDS.

First National Bank of Santa Fe	$75,654.61
Bank of Commerce, Albuquerque	27,789.15
First National Bank of Las Vegas	29,869.73
First National Bank of Albuquerque	29,847,40
Taos County Bank	9,982.55
New Mexico Savings Bank and Trust Company	1,583.28
First National Bank of Raton	14,918.33
First National Bank of Roswell	14,782.39
National Bank of Commerce of New York	17,834.55
San Miguel National Bank	29,890.75
Total	252,152.75
Funds not available	1,583.28
Funds available	250,569.47
Deduct interest due	15,468.58
Free cash balance	235,100.89

Quarterly statement of the Territorial treasurer of New Mexico, second quarter of the fifty first fiscal year, commencing March 3, 1900, and ending June 2, 1900.

Title of fund or account.	Balances Mar. 3, 1900.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances June 2, 1900.
Miscellaneous fund:						
Forty-second fiscal year	$56.00					$56.00
Forty-third fiscal year	37.50					37.50
Forty-seventh fiscal year	5.00					5.00
Fiftieth fiscal year	5,219.78			$5,219.78		
Fifty-first fiscal year	9,082.03		$6,390.56		$5,667.19	9,805.39
Compensation of assessors' fund:						
Forty-second fiscal year	7.85					7.85
Fifty-first fiscal year	2,758.02	$662.44			1,936.41	1,484.05
Deficit fund, forty-second fiscal year	154.60					154.60
Deficit fund, fiftieth fiscal year	965.00					965.00
Interest fund, fifty-first fiscal year	55,598.79		4,365.79		25,075.00	34,889.58
Interest on deposits	2,569.92	1,041.76		1,138.46		2,473.22
University of New Mexico	2,926.88		614.69		2,900.00	641.57
University of New Mexico, Hadley fund	924.62		61.47			986.09
Agricultural College	1,180.52		247.92			1,428.44
New Mexico School of Mines	1,609.78		338.07		1,609.78	338.07
New Mexico Insane Asylum	5,869.75		1,282.11		5,869.75	1,282.11
New Mexico Deaf and Dumb Asylum	732.84		154.01		732.84	154.01
New Mexico Military Institute	2,509.78		338.07		2,500.00	347.85
Normal School, New Mexico (Silver City)	1,609.78		338.07		1,609.78	338.07
Normal University, New Mexico (Las Vegas)	2,056.94		431.99		2,056.94	431.99
Pullman Company tax fund		194.99		97.50	32.03	65.46
Legal expense fund		595.55			177.05	418.50
Special tax fund, fiftieth fiscal year	4,082.97	180.26			324.97	3,938.26
Salary fund, fiftieth fiscal year	10,163.91			10,163.91		
Salary fund, fifty-first fiscal year	22,135.36	2,006.35	12,800.89		9,965.86	26,976.74
Compilation fund	153.00	17.00				170.00
Public-school fund	4,904.38	2,629.67				7,534.05
Charitable institutions, fifty-first fiscal year	8,342.42	567.15	4.32		4,362.24	4,551.65
Special court fund	1,245.71				81.63	1,164.08
Capitol rebuilding fund	30,738.55				22,681.58	8,056.97
Special purposes, fifty-first fiscal year	13,385.73	771.73	5.90			14,163.36
Sheep sanitary fund	578.04	140.31				718.35
Cattle indemnity fund	7,563.79	302.00			3,075.10	4,790.69
Capitol contingent sinking fund	31,567.99	580.81	3.98		20,000.00	12,152.78
Interest and sinking fund, certificate of indebtedness	1,070.28	1,546.97	11.79		965.00	1,664.04
Territorial purposes, fiftieth fiscal year		1,002.62		1,002.62		
Territorial purposes, forty-seventh fiscal year		193.21		193.21		
Territorial purposes, fifty-first fiscal year		9,735.25	1,243.01	10,941.82		36.44
Territorial institutions, fiftieth fiscal year		296.99		296.99		
Territorial institutions, fifty-first fiscal year		3,189.73	585.48	3,756.40		18.81
Territorial institutions, forty-eighth fiscal year		69.49		69.49		
Territorial institutions, forty-seventh fiscal year		56.06		56.06		
Territorial institutions, forty-ninth fiscal year		129.37		129.37		
Territorial institutions, forty-sixth fiscal year		3.81		3.81		
Territorial institutions, forty-fifth fiscal year		1.90		1.90		
Territorial institutions, forty-fourth fiscal year		1.30		1.30		
Territorial institutions, forty-third fiscal year		.93		.93		
Territorial institutions, forty-second fiscal year		.71		.71		
Territorial institutions, forty-first fiscal year		.54		.54		

Quarterly statement of the Territorial treasurer of New Mexico, etc.—Continued.

Title of fund or account.	Balances Mar. 3, 1900.	Receipts during quarter.	Transfers to funds.	Transfers from funds.	Payments during quarter.	Balances June 2, 1900.
Penitentiary current expense fund, fifty-first fiscal year	$4,919.38	....	$634.63	....	$3,355.88	$2,198.13
Penitentiary maintenance fund, fifty-first fiscal year	12,542.74	....	1,991.41	....	11,351.68	3,182.47
Penitentiary convicts' earnings, fifty-first fiscal year	853.24	$1,751.23	....	....	1,882.25	722.22
Supreme court fund	870.14	....	43.77	....	....	913.91
Militia fund, fifty-first fiscal year	802.49	....	98.47	....	640.58	260.48
Capitol maintenance fund	357.25	....	1,138.46	....	....	1,495.71
Total	252,152.75	27,670.13	33,074.80	$33,074.80	128,853.49	150,969.39

RECAPITULATION.

Balances Mar. 3, 1900	$252,152.75
Receipts during quarter	27,670.13
Total to be accounted for	279,822.88
Payments during quarter	128,853.49
On hand June 2, 1900	150,969.39

DISPOSITION OF FUNDS.

First National Bank of Santa Fe	$10,467.57
Bank of Commerce, Albuquerque	23,928.27
First National Bank of Las Vegas	25,916.47
First National Bank of Albuquerque	25,896.82
Taos County Bank, Taos	8,732.53
New Mexico Savings Bank and Trust Co., Albuquerque	*781.19
First National Bank of Raton	13,031.58
First National Bank of Roswell	12,856.40
National Bank of Commerce of New York	3,398.56
San Miguel National Bank, Las Vegas	25,960.00
Total	150,969.39
* Funds not available	781.19
Funds available	150,188.20

Quarterly report of the auditor of public accounts of the Territory of New Mexico, giving a detailed statement of the receipts and expenditures during the first quarter of the fiftieth fiscal year, ending June 3, 1899.

RECEIPTS.

J. L. Perea, treasurer and collector Bernalillo County	$2,106.16
C. W. Haynes, collector Chaves County	3,070.05
J. A. Gilmore, treasurer and collector Chaves County	1,019.60
A. E. Burnam, treasurer and collector Colfax County	4,688.88
Jacob Schaublin, treasurer and collector Dona Ana County	1,902.34
J. D. Walker, collector Eddy County	2.83
J. F. Matheson, treasurer and collector Eddy County	1,016.36
John L. Burnside, treasurer and collector Grant County	2,308.19
Placido Baca y Baca, collector Guadalupe County	864.26
Salome Martinez, treasurer and collector Guadalupe County	357.04
R. Michaels, treasurer and collector Lincoln County	2,237.97
J. B. Martinez, treasurer and collector Mora County	227.58
W. G. Sargent, treasurer and collector Rio Arriba County	1,706.38
C. H. McHenry, treasurer and collector San Juan County	848.03
Fred Muller, treasurer and collector Santa Fe County	979.62
T. Labadie, collector San Miguel County	5,433.00
Margarito Romero, treasurer and collector San Miguel County	6,005.84
Will M. Robins, treasurer and collector Sierra County	471.73
Abran Abeytia, treasurer and collector Socorro County	858.90
Donaciano Cordova, treasurer and collector Taos County	408.89
Nepomuseno Martinez, treasurer and collector Union County	3,356.43
Solomon Luna, treasurer and collector Valencia County	134.00

Quarterly report of the auditor of public accounts of Territory of New Mexico, etc.—Cont'd.

RECEIPTS—continued.

E. H. Bergmann, superintendent New Mexico penitentiary	$1,250.31
A. M. Bergere, clerk first judicial district	169.95
H. P. Owen, clerk second judicial district	440.80
J. P. Mitchell, clerk third judicial district	212.00
Secundino Romero, clerk fourth judicial district	254.35
John E. Griffith, clerk fifth judicial district	203.85
Pullman Palace Car Company	71.05
George H. Wallace, secretary Territory, corporation fees	617.00
George H. Wallace, secretary Territory, unexpended balance employees thirty-third legislative assembly	80.00
Sale of Compiled Laws, 1897	68.00
Total	43,371.39

ABSTRACT OF RECEIPTS AND EXPENDITURES DURING THE QUARTER.

	Receipts.	Payments.
License fund	....	$23.76
Penitentiary current expense fund	$1,250.31	11,969.52
Salary fund	1,280.95	2,051.24
Assessors' fund	1,662.89	2,695.39
Special tax fund	3,806.30	12,854.25
Compilation fund (from sale of Compiled Laws)	68.00	102.00
Capitol contingent sinking fund	1,520.32	....
Capitol rebuilding fund	....	9,642.48
Sheep sanitary fund	374.95	....
Territorial purposes, forty-seventh fiscal year	553.04	....
Territorial institutions, forty-seventh fiscal year	162.19	....
Territorial purposes, forty-eighth fiscal year	561.01	352.71
Territorial institutions, forty-eighth fiscal year	163.71	....
Territorial purposes, forty-ninth fiscal year	1,994.07	....
Territorial institutions, forty-ninth fiscal year	458.19	....
Territorial purposes, fiftieth fiscal year	22,857.65	5,988.70
Territorial institutions, fiftieth fiscal year	5,790.16	....
Cattle indemnity fund	872.65	....
Miscellaneous fund	....	8,449.34
Transportation of convicts fund	....	257.81
Supreme court fund	....	130.52
Territorial institutions fund, viz:		
University of New Mexico	....	1,750.00
Agricultural College	....	1,166.18
New Mexico Insane Asylum	....	4,247.71
New Mexico School of Mines	....	1,195.88
New Mexico Military Institute	....	2,100.00
Normal School, Silver City	....	1,166.18
Normal School, Las Vegas	....	1,166.18
Total	43,371.39	67,309.85

NOTE.—The following appropriations made by the thirty-third legislative assembly were paid from the following funds, and the amounts are included in the column of expenditures above, to wit:

For Territorial purposes, forty-eighth fiscal year, for printing report of superintendent of public institutions in Spanish, H. J. R. No. 4	$352.71
For Territorial purposes, fiftieth fiscal year, for printing bills, etc,, in Spanish, C. B. No. 9	1,199.40
Expenses of commission visiting Territorial institutions, H. J. R. No. 13	125.50
Pay of interpreters, translators, etc., C. J. R. No. 11	3,000.00
Printing reports, etc., in Spanish, H. J. R. No. 4	1,413.80
Pay for muster in and out rolls, C. B. No. 100	250.00
Total	6,341.41

Quarterly report of the auditor of public accounts of the Territory of New Mexico, giving a detailed statement of the receipts and expenditures during the second quarter of the fiftieth fiscal year, ending September 5, 1899.

RECEIPTS.

J. L. Perea, treasurer and collector Bernalillo County	$16,242.86
J. A. Gilmore, treasurer and collector Chaves County	12,168.06
A. E. Burnam, treasurer and collector Colfax County	7,003.13
Jacob Schaublin, treasurer and collector Dona Ana County	9,819.99
J. F. Matheson, treasurer and collector Eddy County	6,870.72
John L. Burnside, treasurer and collector Grant County	20,132.71
Salome Martinez, treasurer and collector Guadalupe County	1,850.09
R. Michaels, treasurer and collector Lincoln County	5,955.20
J. B. Martinez, treasurer and collector Mora County	2,582.17
W. G. Sargent, treasurer and collector Rio Arriba County	2,042.55
C. H. McHenry, treasurer and collector San Juan County	1,373.67
Fred Muller, treasurer and collector Santa Fe County	8,697.64
Margarito Romero, treasurer and collector San Miguel County	9,015.58
William M. Robins, treasurer and collector Sierra County	1,684.88
Abran Abeytia, treasurer and collector Socorro County	8,582.91
Donaciano Cordova, treasurer and collector Taos County	1,376.39
Nepomuseno Martinez, treasurer and collector Union County	8,171.81
Solomon Luna, treasurer and collector Valencia County	3,543.63
J. A. La Rue, secretary cattle sanitary board, fees	2,000.00
George H. Wallace, secretary Territory, corporation fees	1,878.00
W. H. Whiteman, adjutant-general, refund interest fund	8.65
A. M. Bergere, clerk first judicial district, fees	192.85
Harry P. Owen, clerk second judicial district, fees	456.60
J. P. Mitchell, clerk third judicial district, fees	128.80
Secundino Romero, clerk fourth judicial district, fees	522.35
J. E. Griffith, clerk fifth judicial district, fees	325.25
H. O. Bursum, superintendent New Mexico penitentiary	1,664.13
E. H. Bergmann, ex-superintendent New Mexico penitentiary	768.97
Sale of Compiled Laws, 1897	51.00
Sale of capitol rebuilding bonds, second series	60,792.50
Sale of certificates of indebtedness, series "A"	39,475.00
Product of note First National Bank of Santa Fe, to pay interest	11,000.00
Total	246,378.09

ABSTRACT OF RECEIPTS AND EXPENDITURES DURING THE QUARTER.

	Receipts.	Payments.
Penitentiary current expense fund	$2,483.10	$11,415.23
Salary fund	1,625.85	9,676.81
Assessors' fund	5,300.32	3,323.01
Special tax fund	18,452.06	14,900.42
Compilation fund (from sale of Compiled Laws)	51.00	
Capitol contingent sinking fund	5,830.49	
Capitol rebuilding fund	60,792.50	12,315.68
Sheep sanitary fund	811.37	1,400.00
Cattle indemnity fund	5,698.28	
Miscellaneous fund		13,103.56
Supreme court fund		88.90
Territorial purposes, forty-seventh fiscal year	1,600.76	
Territorial institutions, forty-seventh fiscal year	468.70	
Territorial purposes, fiftieth fiscal year	76,349.87	
Territorial institutions, fiftieth fiscal year	21,980.14	
Interest on deposits fund		134.76
Deficiency fund		10.00
Territorial institutions fund, viz:		
University of New Mexico		2,731.13
Agricultural College		640.90
New Mexico Insane Asylum		6,798.64
New Mexico School of Mines		640.90
New Mexico Military Institute		1,900.00
Normal Institute, Silver City		640.90
Normal School, Las Vegas		1,811.63
Due First National Bank of Santa Fe	11,000.00	
Paid by W. H. Whiteman, adjutant-general	8.65	
Certificates of indebtedness, sale	39,475.00	
Total	246,378.09	81,527.41

Quarterly report of the auditor of public accounts of the Territory of New Mexico, giving a detailed statement of the receipts and expenditures during the first quarter of the fifty-first fiscal year, ending March 3, 1900.

RECEIPTS.

J. L. Perea, treasurer and collector Bernalillo County	$26,248.69
J. A. Gilmore, treasurer and collector Chaves County	18,864.70
A. E. Burnam, treasurer and collector Colfax County	25,543.85
Jacob Schaublin, treasurer and collector Dona Ana County	20,521.46
J. F. Matheson, treasurer and collector Eddy County	8,066.12
John L. Burnside, treasurer and collector Grant County	32,358.10
Salome Martinez, treasurer and collector Guadalupe County	2,853.70
Henry Lutz, treasurer and collector Lincoln County	8,734.48
J. B. Martinez, treasurer and collector Mora County	7,762.43
D. M. Sutherland, treasurer and collector Otero County	4,374.60
J. H. Sargent, treasurer and collector Rio Arriba County	3,858.40
C. H. McHenry, treasurer and collector San Juan County	2,720.16
Fred Muller, treasurer and collector Santa Fe County	13,577.72
Margarito Romero, treasurer and collector San Miguel County	25,159.86
William M. Robins, treasurer and collector Sierra County	8,417.34
Abran Abeytia, treasurer and collector Socorro County	16,829.22
Donaciano Cordova, treasurer and collector Taos County	2,730.19
Nepomuseno Martinez, treasurer and collector Union County	12,367.80
Solomon Luna, treasurer and collector Valencia County	3,949.18
J. A. La Rue, secretary cattle sanitary board, fees	2,500.00
George H. Wallace, secretary Territory, corporation fees	441.00
A. M. Bergere, clerk first judicial district, fees	319.90
Harry P. Owen, clerk second judicial district, fees	397.25
J. P. Mitchell, clerk third judicial district, fees	547.25
Secundino Romero, clerk fourth judicial district, fees	530.55
J. E. Griffith, clerk fifth judicial district, fees	321.15
H. O. Bursum, superintendent New Mexico penitentiary	1,434.18
Sale of Compiled Laws, 1897	8.50
A. A. Keen, commissioner of public lands	4,904.38
J. H. Vaughn, Territorial treasurer, interest on deposits	980.40
Total	257,322.56

ABSTRACT OF RECEIPTS AND EXPENDITURES DURING THE QUARTER.

	Receipts.	Payments.
Penitentiary current expense fund	$1,434.18	$18,643.39
Salary fund	2,116.10	7,003.77
Assessors' fund	10,249.21	9,114.53
Special tax fund	651.81	329.70
Compilation fund (from sale of Compiled Laws)	8.50	....
Capitol contingent sinking fund	9,161.96	....
Sheep sanitary fund	1,804.78	1,463.02
Cattle indemnity fund	9,157.28	....
Common school income fund	4,904.38	....
Territorial institutions, forty-sixth fiscal year	.71	....
Territorial institutions, forty-seventh fiscal year	95.06	....
Territorial institutions, forty-eighth fiscal year	1.85	....
Territorial institutions, forty-ninth fiscal year	4.47	....
Territorial institutions, fiftieth fiscal year	1,087.99	....
Territorial institutions, fifty-first fiscal year	55,152.37	39,658.47
Territorial purposes, forty-seventh fiscal year	327.66	....
Territorial purposes, fiftieth fiscal year	3,693.87	....
Territorial purposes, fifty-first fiscal year	106,660.78	....
Charitable institutions fund	9,793.25	2,373.44
Interest and sinking fund and certificates of indebtedness	26,564.89	....
Special purposes	13,471.06	....
Miscellaneous fund	....	5,950.96
Supreme court fund	....	245.35
Capitol rebuilding fund	....	14,585.39
Militia fund	....	196.44
Interest on deposits fund	980.40	....
Total	257,322.56	99,565.46

Quarterly report of the auditor of public accounts of the Territory of New Mexico, giving a detailed statement of the receipts and expenditures during the second quarter of the fifty-first fiscal year, ending June 2, 1900.

RECEIPTS.

J. L. Perea, treasurer and collector Bernalillo County	$3,517.28
J. A. Gilmore, treasurer and collector Chaves County	657.97
A. E. Burnam, treasurer and collector Colfax County	840.72
Jacob Schaublin, treasurer and collector Doña Ana County	709.59
J. F. Matheson, treasurer and collector Eddy County	889.21
John L. Burnside, treasurer and collector Grant County	1,315.19
Salome Martinez, treasurer and collector Guadalupe County	448.90
Henry Lutz, treasurer and collector Lincoln County	398.00
J. B. Martinez, treasurer and collector Mora County	360.54
D. M. Sutherland, treasurer and collector Otero County	251.62
J. H. Sargent, treasurer and collector Rio Arriba County	108.35
C. H. McHenry, treasurer and collector San Juan County	527.26
Fred Muller, treasurer and collector Santa Fe County	242.77
Margarito Romero, treasurer and collector San Miguel County	1,207.44
William M. Robins, treasurer and collector Sierra County	1,430.53
Abran Abeytia, treasurer and collector Socorro County	521.64
Donaciano Cordova, treasurer and collector Taos County	366.10
Nepomuseno Martinez, treasurer and collector Union County	826.66
Solomon Luna, treasurer and collector Valencia County	1,260.56
George H. Wallace, secretary Territory, corporation fees	3,553.25
A. M. Bergere, clerk first judicial district, fees	307.20
Harry P. Owen, clerk second judicial district, fees	665.10
J. P. Mitchell, clerk third judicial district, fees	476.95
Secundino Romero, clerk fourth judicial district, fees	293.75
J. E. Griffith, clerk fifth judicial district, fees	263.35
F. W. Clancy, legal-expense fund	595.55
Pullman tax fund	194.99
H. O. Bursum, superintendentNew Mexico penitentiary	1,751.23
Sales of Compiled Laws, 1897	17.00
A. A. Keen, commissioner of public land	2,629.67
J. H. Vaughn, Territorial treasurer, interest on deposits	1,041.76
Total	27,670.13

ABSTRACT OF RECEIPTS AND EXPENDITURES DURING THE QUARTER.

	Receipts.	Payments.
Penitentiary current expense fund	$1,751.23	$16,589.81
Salary fund	5,559.60	9,757.53
Assessors' fund	662.50	2,144.64
Special tax fund	180.26	324.97
Compilation fund (from sale of Compiled Laws)	17.00	
Capitol contingent sinking fund	578.81	
Sheep sanitary fund	140.31	
Cattle indemnity fund	302.00	
Common school income fund	2,629.67	
Territorial institutions, forty-first fiscal year	.54	
Territorial institutions, forty-second fiscal year	1.99	
Territorial institutions, forty-third fiscal year	.93	
Territorial institutions, forty-fourth fiscal year	1.30	
Territorial institutions, forty-fifth fiscal year	1.90	
Territorial institutions, forty-sixth fiscal year	3.81	
Territorial institutions, forty-seventh fiscal year	56.06	
Territorial institutions, forty-eighth fiscal year	69.49	
Territorial institutions, forty-ninth fiscal year	129.37	
Territorial institutions, fiftieth fiscal year	296.89	
Territorial institutions, fifty-first fiscal year	3,189.69	17,279.09
F. W. Clancy, legal expense fund	595.55	177.05
Pullman tax fund	194.99	32.03
Territorial purposes, forty-seventh fiscal year	193.21	
Territorial purposes, fiftieth fiscal year	1,003.82	
Territorial purposes, fifty-first fiscal year	6,182.00	
Charitable institutions fund	567.15	3,468.39
Interest and sinking fund and certificates of indebtedness	1,506.75	
Special purposes	812.05	
Miscellaneous fund		5,389.65
Supreme court fund		56.00
Capitol rebuilding fund		22,588.49
Militia fund		640.53
Interest on deposit fund	1,041.76	
Total	27,670.13	78,448.18

FINANCIAL STATEMENT OF BERNALILLO COUNTY.

Total bonded indebtedness of the county of Bernalillo up to and including June 30, 1900, amounts to $377,185.11, composed of the following items:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1885	10–20	Funding bonds	6	$22,500.00
Jan. 1, 1886	10–30	Court-house building	7	78,000.00
July 1, 1889	10–30	Funding bonds	6	43,700.00
Do	10–30	Current expenses	6	40,000.00
Nov. 16, 1891	20–30	.....do	6	7,000.00
July 1, 1892	20–30	Bridge building	5.9	30,000.00
Jan. 1, 1893	15–30	Current expenses	6	17,000.00
July 1, 1895	10–30	Funding bonds	6	64,900.00
Aug. 2, 1897	10–20	.....do	6	50,100.00
Total bonded indebtedness				353,200.00
Approved accounts unpaid to June 30, 1900				23,985.11
Total indebtedness to June 30, 1900				377,185.11
Total assessed value of real and personal property for the year 1900				4,880,367.00

FINANCIAL STATEMENT OF CHAVES COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $50,000, composed of the following items:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1891	10–20	Court-house and jail	6	$30,000.00
Do	10–20	Lincoln County indebtedness	6	18,000.00
Do	15–30	Current expenses	6	7,000.00
Total bonded debt				50,000.00
Total assessed valuation, real and personal property, for the year ending June 30, 1900				2,305,086.00

FINANCIAL STATEMENT OF COLFAX COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $70,400, composed of the following items:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
July 1, 1897	10–30	Current expenses	6	$7,000.00
Do	20–30	Funding debt	6	28,900.00
Aug. 1, 1897	20–30	.....do	6	18,500.00
July 1, 1898	20–30	Improvement bonds	6	16,000.00
Total bonded debt				70,400.00
Total assessed value, real and personal property for year ending June 30, 1900				2,913,000.00

FINANCIAL STATEMENT OF DONA ANA COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $94,688.33, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1895	10-20	Funding bonds	6	$5,700.00
July 1, 1899	10-30	.....do	6	32,000.00
July 1, 1895	10-30	.....do	6	23,100.00
Aug. 2, 1897	10-20	.....do	6	7,621.15
July 1, 1889	10-30	Current expense bonds	6	15,000.00
July 1, 1891	15-30	.....do	6	7,000.00
Total bonded debt				90,421.15
Judgments against the county				3,524.40
Approved accounts				589.92
Warrants outstanding				152.86
Total indebtedness				94,688.33
Total assessed value real and personal property for year ending June 30, 1900				2,416,700.00
Void indebtedness under section 302, compiled laws, 1897				11,393.08

FINANCIAL STATEMENT OF EDDY COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $74,079.39, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
			Per cent.	
Nov. 30, 1891	Feb. 6, 1921	County current expenses	6	$7,000.00
July 1, 1891	July 1, 1911	Court-house and jail	6	30,000.00
Jan. 1, 1892	Jan. 1, 1912	Lincoln County indebtedness	6	10,000.00
June 2, 1894	Jan. 6, 1924	Bridge bonds (county)	6	3,000.00
		Floating indebtedness bonds under act thirty-second legislative assembly.	6	24,079.39
Total bonded debt				74,079.39
Total assessed valuation of real and personal property for year ending June 30, 1900				1,285,935.00

FINANCIAL STATEMENT OF GRANT COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $236,988.55, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
			Per cent.	
July 1, 1883	June 30, 1903	Railroad	6	$57,000.00
July 1, 1885	June 30, 1905	Funding indebtedness	7	18,500.00
July 1, 1889	July 1, 1919	.....do	6	115,500.00
Do	.....do	Current expenses	6	27,000.00
Total bonded debt				218,000.00
Approved accounts outstanding				2,100.00
Warrants outstanding				65.87
Judgments against county				8,064.68
Coupon indebtedness				8,758.00
Total indebtedness				236,988.55
Total assessed valuation real and personal for year ending June 30, 1900				3,668,613.00

FINANCIAL STATEMENT OF GUADALUPE COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $29,847.91, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1893	20-30	Court-house and jail	6	$25,000.00
Aug. 2, 1897	10-20	Funding indebtedness of current expenses.	6	2,735.46
Total bonded indebtedness				27,735.46
Judgments against the county				512.19
Approved accounts outstanding for 1898				652.33
Approved accounts outstanding for 1899				592.11
Approved accounts outstanding for 1900				355.82
Total indebtedness				29,847.91
Total assessed value real and personal property for year ending June 30, 1900				647,897.00

FINANCIAL STATEMENT OF LINCOLN COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $48,775, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Oct. 3, 1882	20	Funded indebtedness	8	$3,000.00
Jan. 1, 1883	20	do	8	500.00
June 2, 1883	20	do	8	300.00
Apr. 7, 1885	30	do	6	2,600.00
July 1, 1889	15	do	6	24,300.00
July 1, 1894	20-30	Current expenses	6	7,000.00
Aug. 2, 1897	20-30	Funded indebtedness	6	11,075.00
Total indebtedness				48,775.00
Total assessed valuation real and personal property for year ending June 30, 1900 No floating indebtedness.				1,236,739.00

FINANCIAL STATEMENT OF MORA COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $103,570.46, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Aug. 1, 1889	10-20	Court-house and jail	6	$70,000.00
Interest due and unpaid on bonds				17,339.25
Floating indebtedness				7,982.99
Judgments against county				6,460.57
Current expenses				1,787.65
Total indebtedness				103,570.46
Total assessed value real and personal property for year ending June 30, 1900				1,067,173.00

M'KINLEY COUNTY.

McKinley County was formed from a portion of the county of Bernalillo by an act of the thirty-third legislative assembly of the Territory of New Mexico, passed February 23, 1899.

The only indebtedness against the county at the date of June 30, 1899, was its portion or pro rata of the indebtedness of that (Bernalillo) county, and it is impossible to determine what the pro rata of indebtedness will be until the assessment of this county has been completed.

This county of McKinley will be organized in 1900.

OTERO COUNTY.

Otero County was formed from portions of Dona Ana, Socorro, and Lincoln counties by an act of the thirty-third legislative assembly of the Territory of New Mexico, which went into effect February 1, 1899.

The only indebtedness against the county at date of June 30, 1899, was its portion or pro rata of the indebtedness of those counties, and it is impossible to determine what the pro rata of indebtedness will be until the assessment of this county has been completed.

FINANCIAL STATEMENT OF RIO ARRIBA COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $51,902.60, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
July 5, 1882	20–30	Funding bonds, current expenses of court-house, jail, and bridges	6	$45,749.00
Total bonded indebtedness				45,749.00
Approved accounts outstanding				5,015.80
Warrants outstanding				1,137.80
Total indebtedness to June 30, 1900				51,902.60
Total assessed value of real and personal property for year ending June 30, 1900				956,196.00

FINANCIAL STATEMENT OF SAN JUAN COUNTY.

Total indebtedness of said county up to and including June 30, 1900, amounts to $21,290.16, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Dec. 30, 1889	Dec. 30, 1919	Current expense	6	$8,000.00
Sept. 1, 1892	Sept. 1, 1922	Jail bonds	6	2,500.00
Jan. 1, 1893	Jan. 1, 1923	Current expense	6	4,000.00
Oct. 1, 1892	Oct. 1, 1922	Judgment	6	2,600.00
Apr. 1, 1894	Apr. 1, 1923	Current expense	6	3,000.00
Total bonded debt				20,100.00
Warrants outstanding				180.05
Floating indebtedness				1,010.11
Total indebtedness				21,290.16
Total assessed valuation real and personal property for year ending June 30, 1900				516,953.00

FINANCIAL STATEMENT OF SAN MIGUEL COUNTY.

Total indebtedness of San Miguel County up to and including June 30, 1900, amounts to $496,886, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
July 1, 1882	10	Refunding	8	$3,300.00
July 1, 1884	10	Court-house and jail	6	26,500.00
July 1, 1889	10–30	Funding debt	6	213,300.00
Jan. 1, 1892	30	Court-house and jail bonds	6	18,000.00
Nov. 1, 1895	20–30	Funded debt	5½	113,300.00
July 1, 1897	10–20	.....do	6	13,879.00
Total bonded indebtedness				388,279.00
Approved accounts outstanding, including floating debt				10,000.00
Judgments against county				23,107.00
Past due interest unpaid				75,500.00
Total indebtedness				496,886.00
Total assessed value real and personal property for year ending June 30, 1900				3,556,301.00

FINANCIAL STATEMENT OF SANTA FE COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $874,256.42, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
July 1, 1882	10–20	Current expense	8	$14,600.00
Jan. 1, 1895	20–30	.....do	6	27,000.00
Jan. 10, 1890	20–30	.....do	6	6,300.00
Sept. 29, 1891	20–30	Railroad bonds	5	262,000.00
Aug. 21, 1891	20–30	Current expense	5	19,500.00
Mar. 1, 1892	20–30	Railroad bonds	5	178,600.00
Do	20–30	Court-house and jail	5	64,500.00
Do	20–30	Current expense	5	90,900.00
Jan. 1, 1893	20–30	.....do	5	3,500.00
Aug. 1, 1897	10–20	.....do	6	13,139.00
Total bonded indebtedness				680,039.00
Outstanding warrants				2,790.00
Accounts filed and approved and certificates issued				2,850.00
Accounts due and approved				421.00
Past due interest unpaid				188,156.42
Total indebtedness				874,256.42
Total assessed value real and personal property for year ending June 30, 1900				1,886,940.00

FINANCIAL STATEMENT OF SIERRA COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $68,623, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
July 1, 1889	15–30	Funding bonds	6	$56,800.00
Do	15–30	Current expense	6	10,000.00
Total bonded indebtedness				66,800.00
Approved accounts unpaid to June 30, 1900				1,823.00
Total indebtedness to June 30, 1900				68,623.00
Total assessed value real and personal property for year ending June 30, 1900				1,355,170.00

FINANCIAL STATEMENT OF SOCORRO COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $180,355.66, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1884	10-20	Court-house and jail funding debt	6	$103,500.00
July 1, 1889	10-20	Bridges and improvements	6	54,700.00
July 1, 1897	10-20	Funding bonds	6	20,700.00
Total bonded indebtedness				178,900.00
Approved accounts outstanding				1,435.66
Total indebtedness to June 30, 1900				180,335.66
Total assessed value real and personal property for 1900				4,501,588.00

FINANCIAL STATEMENT OF TAOS COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $44,900, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
June 6, 1889	10-30	Funding bonds	6	$24,500.00
July 2, 1889	10-30	Current expense	6	3,000.00
July 1, 1892	15-30	.....do	6	3,500.00
Aug. 2, 1897	10-20	Funding bonds	6	10,400.00
Total bonded indebtedness				41,400.00
Approved accounts outstanding to June 30, 1899				3,500.00
Total indebtedness to June 30, 1900				44,900.00
Total assessed value real and personal property for year ending June 30, 1900				790,578.42

FINANCIAL STATEMENT OF UNION COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $42,293.31, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Nov. 21, 1894	10-20	Court-house and jail	6	$20,000.00
Jan. 15, 1895	15-30	Current expenses	6	7,000.00
Mar. 1, 1900	10-20	Refunding bonds	6	10,000.00
Outstanding indebtedness				5,293.31
Total indebtedness				42,293.31
Total assessed value real and personal property for year ending June 30, 1900				1,817,835.00

FINANCIAL STATEMENT OF VALENCIA COUNTY.

Total indebtedness of the said county up to and including June 30, 1900, amounts to $106,982, composed of the following amounts:

Bonded debt.

Date of issue.	Date of maturity.	For what purpose issued.	Rate of interest.	Amount.
	Years.		*Per cent.*	
Jan. 1, 1882	10-20	Floating debt	8	$18,982.00
Jan. 1, 1885	10-20	.....do	6	3,800.00
Jan. 1, 1889	10-20	.....do	6	18,700.00
Aug. 1, 1889	10-20	Current expenses	6	30,000.00
Jan. 1, 1891	10-20	.....do	6	7,000.00
Jan. 1, 1895	10-20	Floating debt	6	20,000.00
Jan. 1, 1897	10-20	.....do	6	8,500.00
Total bonded indebtedness				106,982.00
Total assessed value real and personal property for year ending June 30, 1900				1,996,457.88

RECAPITULATION.

County.	Assessed value.	Indebtedness.
Bernalillo	$4,880,367.00	$377,185.11
Chaves	2,305,086.00	50,000.00
Colfax	2,913,000.00	70,400.00
Dona Ana	2,416,700.00	94,688.33
Eddy	1,285,985.00	74,079.39
Grant	3,668,613.00	236,988.55
Guadalupe	647,897.00	29,847.91
Lincoln	1,236,789.00	48,775.00
Mora	1,067,178.00	103,570.46
McKinley	....	....
Otero	652,652.00	....
Rio Arriba	956,196.00	51,902.60
San Juan	516,953.00	21,290.16
San Miguel	3,556,801.00	496,886.00
Santa Fe	1,886,940.00	874,256.42
Sierra	1,355,170.00	68,623.00
Socorro	4,501,588.00	180,355.66
Taos	790,578.42	44,900.00
Union	1,817,835.00	42,298.31
Valencia	1,996,457.88	106,982.00
Total	38,452,181.30	2,973,023.90

NOTE.—McKinley and Otero counties were created by the last legislature, and are included in the counties from which they were formed in the assessment and debt of 1899 and until June 30, 1900. Otero County gives assessment but not debt.

BANKS.

The statements of the different banks throughout the Territory of New Mexico show the following business for the fiscal year ending June 30, 1900:

Name of bank and location.	Resources.	Liabilities.
First National Bank, Albuquerque	$2,322,210.89	$2,322,210.89
First National Bank, Las Vegas	746,564.71	746,564.71
First National Bank, Santa Fe	578,437.88	578,437.88
First National Bank, Roswell	415,691.23	415,691.23
First National Bank, Raton	290,526.43	290,526.43
First National Bank, Carlsbad	153,558.13	153,558.13
First National Bank, Alamogordo	127,101.88	127,101.88
San Miguel National Bank, Las Vegas	738,557.97	738,557.97
Silver City National Bank, Silver City	432,820.76	432,820.76
Bank of Commerce, Albuquerque	603,437.33	603,437.33
The Bank of Deming, Deming	308,234.39	308,234.39
Sierra County Bank, Hillsboro	156,063.28	156,063.28
Exchange Bank of White Oaks, White Oaks	134,042.82	134,042.82
The Las Vegas Savings Bank, Las Vegas	115,159.35	115,159.35
Taos County Bank, Taos	94,537.28	94,537.28
Geo. D. Bowman & Son, Las Cruces	76,976.43	76,976.43
S. T. Bitting's Bank, Carlsbad	76,187.83	76,187.83
Andrew Morton & Co., Springer	56,149.60	56,149.60
	7,426,258.19	7,426,258.19

United States Internal Revenue,
Collector's Office, District of New Mexico,
Santa Fe, N. Mex., September 8, 1900.

Dear Sir: In response to your request dated September 7, please find herewith appended schedule showing the business of my office for the Territory of New Mexico during the fiscal year ended June 30, 1900:

Collections for New Mexico.

Special-tax stamps	$23,019.69
Tax-paid spirit stamps	74.25
Documentary stamps	25,726.99
Proprietary stamps	1,894.62
Collections on lists	3,982.12
Cigars and cigarettes	2,524.14
Tobacco	120.36
Beer	7,438.90
Total	64,781.07

Very respectfully,

A. L. Morrison,
Collector Internal Revenue.

Hon. M. A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

SOLICITOR-GENERAL.

Santa Fe, *May 9, 1900.*

Sir: In response to your request of the 8th instant for a report of my office during the past year to use in your report to the Interior Department, I beg leave to submit:

My last report was made on the 27th day of December, 1898. All the recommendations which were contained in that report were adopted by the legislature and enacted into laws.

Since that time I have rendered 84 official opinions to different Territorial officers, at their request. I prepared forms of refunding bonds for the Territory, counties, cities, towns, school districts, and boards of education, and approved the form of bonds for several counties and municipalities.

In May, 1899, as required by chapter 59, session laws of 1899, I acted with the treasurer and auditor in passing upon and approving deficiency claims to the amount of about $125,000, and prepared the form of certificates to be issued for the same.

At the request of the commerce commission, I brought a criminal suit against B. G. Wilson, the manager of the Continental Oil Company, for violation of section 2, chapter 50, session laws of 1899. He was arrested, and applied for a writ of habeas corpus to the supreme court, where I appeared. After argument the court rendered a judgment discharging the prisoner, on the ground that said section 2 was in violation of the commerce clause of the Constitution of the United States, not passing upon any of the other sections of the act.

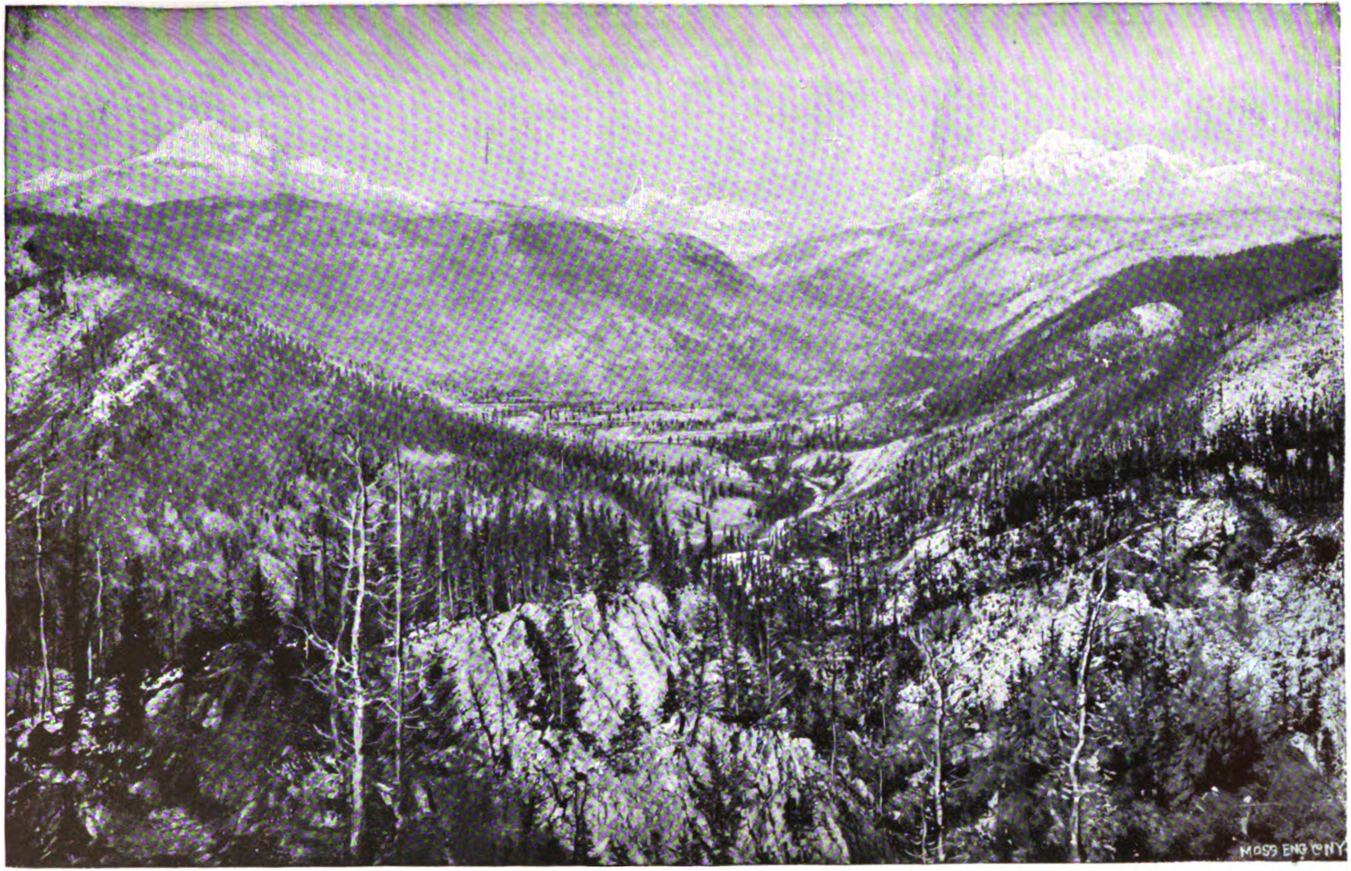
I brought two suits against former incumbents of the office of coal-oil inspector and their bondsmen in the district court, which suits are now pending on demurrer and undisposed of.

I gave consent in three instances to use the name of my office in quo warranto proceedings, after having examined the information carefully and considering the cases to be such as required the issuance of such writs.

I approved the tax levied for Territorial purposes for the fifty-second fiscal year, submitted to me by the auditor.

In July of last year I brought mandamus proceedings in the district court against Samuel Eldodt, on the application of J. H. Vaughn, to obtain possession of the treasurer's office. The district court awarded a peremptory writ. From this judgment Eldoldt took an appeal to the supreme court, where the judgment of the court below was affirmed at the last term.

Before the passage of the act of Congress giving the city of Santa Fe 4 square leagues of land, I had applied to the surveyor-general, under the act of Congress providing for applications under the small holdings act, for title to all lands held and occupied by the Territory for penitentiary, capitol, deaf and dumb institute, and



HEAD WATERS OF THE PECOS.

other buildings, but since the passage of the act of Congress giving the 4 square leagues of land to the city of Santa Fe I do not consider it necessary to proceed further under the small holdings act.

Since the date of my last report I have appeared for the auditor in the district court in three suits brought against him by mandamus, also in the district court upon a statement of facts, made argument, and submitted to the court a question on the construction of the law in regard to fidelity and guaranty insurance companies paying a license fee as insurance companies.

In the district court of Colfax County there is a suit pending against the secretary of the Territorial board of equalization, on writ of certiorari, on the appeal of the plaintiff from the decision of the board of county commissioners in regard to his taxes.

At the last January term of the supreme court I prepared briefs in 12 cases, argued and submitted the same, as follows: Two mandamus, both decided in favor of the Territory; 5 for murder, of which 3 have been affirmed in favor of the Territory, 1 reversed and remanded for a new trial, and 1 is still undisposed of; 4 cases for larceny of animals, of which 3 were affirmed in favor of the Territory and 1 is undisposed of, and 1 case for rape, which has been submitted but is not yet determined.

I also filed informations in the nature of a quo warranto against the Colorado Fuel and Iron Company and the Colorado Supply Company, for them to show cause why they did business in the Territory without complying with its laws in regard to foreign corporations. After the issuance of the writs these companies came in, complied with the law, and the two cases were dismissed, upon their payment of costs.

I presented a rule to the supreme court, which was adopted, providing for the clerks of the district courts, upon the determination of any criminal case in which an appeal had been allowed, to at once notify the solicitor-general of the fact and transmit to the clerk of the supreme court a transcript of the record proper, in order that these criminal appeals might be brought to the attention of the court in a timely way, and avoid the habit of the appellant of delaying until the last minute before sending a transcript, which frequently is not filed until after the sitting of the court, when it is occupied with other business and the solicitor-general is extremely busy in the court with cases already before it.

In addition to this I have written a large number of official letters and communications, which were not considered as official opinions, but contained advice and suggestions to interested persons in regard to the conduct of public affairs, a number of these being upon the subject of honoring requisitions from other States and Territories and from the Republic of Mexico, and granting like papers for the extradition of criminals wanted here.

Very respectfully, your obedient servant,

Edward L. Bartlett,
Solicitor-General.

Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

THE NATIONAL GUARD.

Territory of New Mexico,
Office of the Adjutant-General,
Santa Fe, N. Mex., June 30, 1900.

Sir: I have the honor to make report of the condition of the National Guard of New Mexico on the 30th day of June, 1900. The National Guard on this day is composed of five companies of infantry belonging to the First Regiment, two troops of cavalry belonging to the First Squadron, and a Gatling-gun squad. The headquarters of the First Regiment of infantry is at Albuquerque, and the companies are stationed as follows, viz: Company A at Las Cruces, Company B at Mesilla, Company F at Santa Fe, Company G at Albuquerque, and Company I at Las Vegas.

The headquarters of the First Squadron of cavalry are at Santa Fe, and Troop A is stationed at Hillsboro and Troop E at Santa Fe. The Gatling-gun squad is stationed at Santa Fe. The aggregate strength of the National Guard is 450 officers and men, of which the number of officers and men uniformed is 404. Troop A of the First Squadron of cavalry have not been furnished with uniforms, owing to the insufficiency of the appropriation.

Applications are on file for the organization of cavalry troops at Alamogordo and Roswell, and an effort is being made to organize additional infantry companies at Albuquerque and Las Vegas, which will be authorized if our allotment of the new Congressional appropriation is sufficient to justify the expense.

The guard of the Territory, though not large in number, is in good condition, and officers and men manifest considerable zeal and interest in the work. The condition of the guard has greatly improved in efficiency since my report of last year. More attention has been paid to drill, and the good effect is shown in the improved soldierly appearance of the men. The arms and uniforms are better cared for, and pride in their personal appearance is now a marked characteristic in officers and men.

Upon the occasion of the dedication of the new capitol, June 4, 1900, we were able to mobilize seven uniformed organizations of the National Guard in the city of Santa Fe. Their appearance on parade was excellent, their tactical movements skillful, their arms and accouterments and uniforms in good condition, and their bearing soldierly. So well did they appear and bear themselves as to evoke from spectators many compliments, and it gave to the officers who have had charge of the work a feeling of pride that they had been able to accomplish so much with so little encouragement from the Territory. The appropriation by the Territory for the support of the National Guard, for all purposes, including the salary of adjutant-general, rent of armories, transportation of arms, uniforms, and equipment, fuel, lights, stationery, traveling expenses, etc., is but $2,000 per annum. A reference to what other States are doing for the National Guard is not out of place here. For instance, the strength of the National Guard of New York is 14,230, or thirty-two times greater than our own; the annual appropriation of that State for the support of the guard is $477,000, or nearly two hundred and forty times greater than that of New Mexico. The strength of the National Guard of Pennsylvania is 10,036, twenty-three times greater than our own; its annual appropriation for the support of the guard, $350,000, is one hundred and seventy-five times greater than that of New Mexico. But let us take, for example, our neighboring State of Colorado; the strength of its National Guard is 1,142, or two and one-half times greater than New Mexico; its annual appropriation for the support of the guard is $30,000, which is fifteen times greater than that of New Mexico. I do not argue for a large appropriation for the support of our guard, but the facts show that the Territory has done but little, and appropriations in the future should be more commensurate with the importance of the subiect, or the National Guard of New Mexico should be disbanded. Outside of the matter of arms and uniforms, which are furnished by the Government, the support of the guard has mainly fallen upon the officers and men, and they, seeing what ample provision is made for the guard in other States, become discouraged and dissatisfied. The conduct of members of our guard who have served in United States volunteer regiments has reflected great credit and honor upon the Territory. They have shown the utility of their training, and that they are not behind the volunteer soldiers of other States in the value of their service to the country.

The lamented Capt. Max Luna received his military training in the National Guard of New Mexico; so did Captains Muller and Llewellyn and Lieutenants Griffin, Coleman, Green, Kelley, and others of the Rough Riders, and Captains Borrodaile, Strover, and Reid, and Lieutenants Chamberlin, McRae, Otero, and others of the First Territorial United States Infantry. They did their part faithfully and well, and their gallant conduct appeals to the Territory to do its part in preparing the present guard of the Territory for the time when they too may be called to battle for the honor and safety of their country.

The allotment to the Territory of the Congressional appropriation for several years has been about $2,240. That appropriation has been increased by Congress from $400,000 to $1,000,000. Our allotment in the future will probably be about $6,000. This will enable us to increase the strength of our guard, and to arm and equip the men in better shape than ever before. The Congressional allotment can only be used in the purchase from the Government of uniforms, arms, and equipment. No part of it can be used in paying the contingent expenses of the guard. The increased strength of the guard and larger armament and equipment will naturally demand from the Territory larger appropriations in order to distribute and care for the same.

I take from the report of the adjutant-general of the State of Ohio for the year 1897 a statement of the salaries paid by that State to the adjutant-general and his assistants: Salary of adjutant-general, $2,000 per annum; assistant adjutant-general, $1,500; chief clerk, $1,400; superintendent of arsenal, $1,400; salary of five clerks, $6,000; salary of stenographer, $600; contingent expenses, $2,000. In addition to that the quartermaster-general, the commissary-general, the inspector-general, and surgeon-general also receive salaries. In New Mexico the adjutant-general performs also the duties of quartermaster, commissary, and inspector-general and chief of ordnance, he is not allowed an assistant or clerk, and his salary is $600 per annum. No comment on these figures is necessary.

ARMAMENT.

The armament of the National Guard consists of 1 Gatling gun, caliber .45, model of 1884, and is an excellent piece of ordnance; 400 Springfield rifles, caliber .45; 134 Springfield carbines, caliber .45; 33 Colt's revolvers, caliber .45, and 67 cavalry sabers. Application has been made to the Chief of Ordnance, United States Army, to exchange all of the Springfield rifles and carbines for a like number of Krag-Jörgensens, and it is hoped that before the close of this year our guard will be fully equipped with the more modern and better arm.

OFFICIAL ROSTER.

Governor and commander in chief, Miguel A. Otero; adjutant-general and ex officio quartermaster-general, commissary-general, inspector-general, chief of ordnance, and chief of staff, W. H. Whiteman. Aides-de-camp, acting judge-advocate-general, Col. R. E. Twitchell; acting surgeon-general, Col. W. R. Tipton, Col. E. Godwin-Austen, Col. Harry Whigham, Col. E. W. Dobson, Col. H. A. Alexander, Col. J. E. Hurley, Col. Venceslado Jaramillo, Maj. J. G. Meadors, Maj. R. S. Goss.

First Regiment of Infantry: Col. John Borrodaile, commanding; Lieut. Col. R. C. Rankin; Maj. Eugene Van Patten, Third Battalion; major First Battalion, vacant; major Second Battalion, vacant; Maj. Surg. John F. Pearce; chaplain, Capt. Fred J. Bennett; adjutant, First Lieut. E. L. Medler; quartermaster, First Lieut. F. H. Strong; battalion adjutant, First Lieut. B. F. Forsythe, First Battalion; battalion quartermaster, First Lieut. H. W. Kelley; assistant surgeon, Capt. H. M. Smith; chaplain, Capt. George Selby; battalion adjutant, First Lieut. John Francis Findlay, Third Battalion; battalion quartermaster, First Lieut. William Ascarate; assistant surgeon, Capt. John McConnell; chaplain, Capt. Pedro Lassaign.

Company A: Capt. Oscar Lohman; First Lieut. W. Chetham Strode; Second Lieut. W. F. Jacoby.

Company B: Capt. Allen C. Tyson; First Lieut. Louis Goodman; Second Lieut. Francisco Rivera.

Company F: Capt. Jasper N. Ortiz; First Lieut. John Shoemaker; Second Lieut. James B. Read.

Company G: Capt. L. H. Chamberlin; First Lieut. J. E. Elder; Second Lieut. Charles Whiting.

Company I: Capt. J. P. S. Mennet; First Lieut. Herman Ilfeld; Second Lieut. Bonifacio Lucero.

First Squadron Cavalry: Maj. Frederick Muller, commanding; Maj. Surg. J. H. Sloan; adjutant quartermaster, vacant.

Troop A: Capt. W. S. Hopewell; First Lieut. J. S. McPherson; Second Lieut. Peter Crumrine.

Troop E: Capt. William E. Griffin; first lieutenant, vacant; Second Lieut. Arthur Griffin.

Gatling-gun squad: First Lieut. W. H. Pope, commanding.

In the year just closed I placed lockers for each man in the armories of Troop E and the Gatling-gun squad stationed at Santa Fe for the better preservation and care of arms and uniforms, in which each man can keep his entire equipment, and it has been found to be a great aid in keeping arms and uniforms together and in keeping the same in order. Company G, at Albuquerque, is also provided with lockers, and it is hoped that during the coming year they can be placed in every armory in the Territory.

Pursuant to section 31, chapter 50, Laws of New Mexico, 1897, which requires an annual inspection to be made of the discipline, courses of study, and general management of all military schools within the Territory, I proceeded on the 10th day of May, 1900, to inspect the New Mexico Military Institute, located at Roswell. The inspection was as thorough and comprehensive as could be made, and the impression made upon me by everything I saw was much better than the year before. The school being one year older, everything about it seemed more mature; grass, trees, and shrubbery have filled up the barren places, and the campus, which three years ago was a barren mesa, is fast becoming a place of beauty. The cadets have grown in height, have filled out, are well set up, their uniforms in good condition, and their bearing and conduct soldierly. They gave an exhibition drill which was very creditable to the boys, and especially so to their instructor in military tactics, Major Wilson. I inspected the cadets, their uniforms, arms, and accouterments, and the place where they are kept, and found all in good condition. The arms used at the institute, 80 Springfield rifles, loaned to the school two years ago by order of Governor Otero, are too heavy for the younger class of cadets, and provision should be made to provide the institute with arms more suitable to their years and strength.

This school is more strictly a Territorial institution than any other school in the Territory; students are there from every county, and the scramble that occurs every year in each county to obtain the appointment speaks well for the reputation and excellent character of the school. I took occasion to inquire of many of the boys how they were treated, whether they were satisfied with their instructors, and if they would return next year, and received the same reply from all—that they were entirely satisfied with the school and with their treatment, with the superintendent and instructors; that they would return if they had a chance, and no complaint was made to me by any of them of any kind whatever.

The ground of the institution consists of 40 acres of land situated north of and about three-quarters of a mile from the center of Roswell. The view from the main building presents one of the handsomest pastoral scenes to be found in New Mexico; to the south lies the beautiful town of Roswell, and stretching away to the south and east are miles of orchard and alfalfa, dotted here and there with pleasant homes; to the east can be seen the majestic El Capitan Mountain, and beyond the fields of orchard and alfalfa are the vast plains which afford pasture to thousands of cattle and sheep.

The main building is a substantially built three-story and basement structure of red brick. The basement is used for armory, bath and swimming pool, kitchen, dining room, and storeroom; the main floor for class rooms, and the two upper floors for dormitories. The rooms are well but modestly furnished and well kept. I was pleased to find in one of the rooms a library of several hundred miscellaneous books, the gift of Hon. J. J. Hagerman, which have been added to the institute since my inspection of last year.

About 300 feet west of the main building is a two-story frame building containing eight rooms, which was built two years ago, out of the earnings of the institution, as a residence for the superintendent. During last year this building was used as a dormitory, and a six-room frame house was erected, also out of the earnings, for a residence for the superintendent.

When the institute opened in September, 1899, every available bed was occupied, and during the term many applications for admission were refused because there was no place to put them. The earnings of the institute during the last year were $11,000. If another building were constructed equal in size to the present main building, thus affording room to all who wish to enter, the institute would soon be self-supporting and would call for no aid from the Territory, except for the support of the county cadets. The Territorial appropriation to the institute is now $10,000 a year. With the expenditure of $15,000 in a new building, the Territorial appropriation could be reduced to $5,000 a year, which seems to me a good business proposition. The earnings of the institute are limited to its capacity to do business. If its capacity be increased to the extent of the demand for admission, the net earnings will increase in greater proportion, because the same number of instructors and employees can take care of double the number of students.

Acting upon my recommendation of last year, the regents removed the laundry from the basement adjoining the kitchen. The laundry work is done under contract outside the building, and the old laundry is now used as a storeroom, an unsuitable place for it. Being in too close proximity to the kitchen, the stores are affected by the heat. The immediate pressing wants of the institute are proper rooms for storeroom, laundry, and gymnasium. These could perhaps be provided for in the new building, the building which I strongly recommend as a good business proposition, and because it would make a saving to the Territory, and because the proper accommodation of the students demands it.

The old maxim "that a strong body is necessary to a strong mind" is here regarded, and especial attention is paid to gymnastic and athletic exercises. This is not left optional with the students, but is imposed upon all alike, in proportion to their strength, and the good effects of such exercises are already perceptible in the improved appearance of the students. The slouchy appearance which was noticeable a year ago has disappeared, and the boys are taking on the alert, erect bearing and quick tread of the soldier.

The regents have also acted upon my recommendation of last year and have excluded from the school all students save those who are actually in barracks, so that the institute is no longer a day school for the children of Roswell, but is in every essential a Territorial institution; and the good effects of this change of policy can be seen in the better discipline displayed.

I strongly recommend that the law should be so changed as to make elections or appointments to county scholarships good for four years, or during diligence and good behavior. The primary object in the establishment of such schools is to give military training to the youth of the Territory. This object is defeated if continuance in the school for more than one year should depend upon the personal favor or caprice of county officers having the appointing power. I am also of the opinion that the institute should be brought in closer relation with the National Guard by a law which would make graduates of the school eligible to receive a commission as second lieutenant in any National Guard organization in the county of their residence, and giving them a preference for such commissions. It is an indisputable fact that the military training given in the institute is more thorough and comprehensive than can be given to the National Guard, for the reason that while the National Guard soldier is drilled for two hours twice a month the students in the institute are drilled for two hours every day. They also have the advantage of drill in battalion formation, which is denied to the widely scattered National Guard organizations.

I also renew my recommendation of last year that a law should be enacted which would authorize the governor of the Territory to issue commissions to the superintendent and instructors in the school—the superintendent to be colonel, the commandant to be major, and the instructors to be captains—and which would give them power to inflict military punishment for military offenses. Under the present law the superintendent is an aid-de-camp on the staff of the governor with the rank of major, but the powers and duties belonging to the rank are not defined, and therefore the office is purely an honorary one. Provision should be made by law for giving rank to cadets who exercise authority over the main body of students. I deem this of great importance and necessary to the proper maintenance of authority and discipline.

I give below the course of study prescribed for the institute:

Preparatory classes.—Class A: Spelling, reading, geography, language lessons, arithmetic, writing. Class B: English grammar, spelling, reading, arithmetic, geography, United States history. Class C: English grammar, reading, spelling, United States history, arithmetic, physical geography, writing. Class D: English grammar, arithmetic, spelling, algebra, general history, physiology.

The course of study in the collegiate classes is as follows, and county students must be prepared to enter the fourth class:

Collegiate classes.

FOURTH CLASS.

First term.	Second term.	Third term.	Times a week.
Algebra	Algebra	Algebra	5
	Geometry	Geometry	5
Rhetoric	Rhetoric	Rhetoric	3
English history	English history	English history	3
Spanish	Spanish	Spanish	5
Latin	Latin	Latin	5
Drawing	Drawing	Drawing	3

THIRD CLASS.

	Geometry	Trigonometry	3
Geometry	English literature	English literature	5
Spanish	Latin	Latin	5
Latin			5
	Trigonometry	Surveying	3
Drawing	Drawing	Drawing	3

SECOND CLASS.

Analytical geometry	Analytical geometry	Analytical geometry	5
Spanish	Spanish	Spanish	3
German	German	German	3
Latin	Latin	Latin	3
Physics	Physics	Physics	3
Tactics	Tactics	Tactics	5

FIRST CLASS.

Calculus	Calculus	Calculus	5
Astronomy	Astronomy	Spanish history	3
Geology	Geology	Geology	5
Chemistry	Chemistry	Chemistry	5
German	German	German	3

The faculty is composed of James G. Meadors, superintendent, graduate of Washington and Lee University; J. W. Willson, commandant of cadets, graduate of Virginia Military Institute; W. S. Fitzgerald, graduate of Vanderbilt University; L. Martini-Mancini, of the School of Arms, Italy; W. E. Davis, graduate of Washington and Lee University. These gentlemen are thoroughly competent and proficient in their respective departments and are rendering the Territory excellent service. They are well liked by students and highly respected by everyone in the community. Mrs. Meadors, the matron, is an excellent woman for the place. She is gentle, kind hearted, and sympathetic, and bestows a motherly care upon all the students.

In conclusion, I give it as my judgment, founded upon careful investigation, that the institute is doing an excellent educational work; that it is deserving of the patronage of the people of New Mexico, and that it should receive from the Territory greater assistance in the way of appropriations, in the line I have pointed out, than it has heretofore had.

Very respectfully,

W. H. WHITEMAN,
Adjutant-General.

Hon. MIGUEL A. OTERO,
Governor of New Mexico.

REPORT OF THE TERRITORIAL LIBRARIAN.

SANTA FE, N. MEX., *July 24, 1900.*

To the Governor:

In response to your call for a report on the condition and progress of the Territorial library during the past year, I have the honor to report:

That when in March, 1899, the library came under my control, I found it in many respects in a very unsatisfactory condition, not because of any fault of those previously having it in charge, but mainly by reason of the cramped and unsuitable quarters to which for years it had been confined. It had been involved in the disastrous fire which in 1892 destroyed the old capitol building, and such of the books as were saved from that conflagration were then placed in the only quarters then attainable, consisting of but four moderate-sized basement rooms, two of which were without light and eventually became storage rooms, and the others without room sufficient to shelve all the books in daily requisition, and where they, with all subsequent accumulations, remained without room for thorough arrangement until their removal in June last to the new capitol building, where they are now being properly shelved and arranged.

Aside from the various public documents sent by the General Government and the several States and Territories (of which there are several tons in almost inextricable confusion, never having as yet been classified or arranged for want of room), the library consists almost wholly of books pertaining to the law, and may be classed as a law library pure and simple, there not being 100 volumes, perhaps, that may not be so designated.

I have never been able to find any catalogue or list of the books, although legislative acts passed in 1853, 1863, and 1882, respectively, each provided for such list, and for continuing it as new books were added. It is almost impossible, therefore, to determine the condition of the library as to the number of volumes at any one time in the past, or to trace its progress thereafter. Enough can be learned, however, to show that nine-tenths or more of the volumes we now have (public documents excepted) have been added since 1882. The act of that year, above referred to, required the librarian, before the next succeeding session of the legislature, to prepare and number a catalogue of the library, and cause each book to be numbered by pasting the catalogue number thereon. Now, while the catalogue so provided for seems to be lost or destroyed, some hundreds of volumes are so numbered, and doubtless in compliance with said act of 1882, and as 400 is the highest number to be found, the presumption is strong that the books in the library did not exceed that number at the time of such numbering. Nor should this appear strange, for up to that date no appropriation for the purchase of books for the library appears upon the statutes, nor have I been able to find any such appropriation until the session of 1887, when $8,000 was so appropriated, to be expended under the direction of the chief justice; and this appropriation and the annual accumulations since 1882, by way of exchanging with the several States and Territories, will no doubt account for all the books that were in the library at the time of the fire alluded to, which had not been catalogued and numbered under said act of 1882. What number of volumes were in the library at

SAINT VINCENT'S SANITARIUM, SANTA FE, N. MEX.

the time of that conflagration and what number were then lost or destroyed there is no means of ascertaining, because of the want of a catalogue; nor can it be learned how many volumes have since been added by purchase or otherwise for the same reason, and because from the 27th of February, 1891, until the 30th of June, 1899, when the present board of library trustees was appointed and organized, there is no record of any proceedings of the trustees nor of any purchases made by them during that period.

It will be seen, therefore, that the number of volumes now contained in the library can be ascertained by an actual count only, after they are all in place in the room designed for them in the new capitol; but this the board of trustees have not been able as yet quite to accomplish, though so nearly as to enable a close estimate to be made from the shelf room occupied by those already in place and those yet to be placed, and by this estimate there are now (excluding all that do not pertain to a law library) at least 5,600 volumes, of which 500 have been obtained by purchases made by the present board of trustees during the present fiscal year, and members of said board advise me that there is a balance of appropriations for this fiscal year amounting to some $400 yet to be in like manner expended. I am advised also that said board proposes to have the books properly catalogued, labeled, and numbered as soon as possible after all are in place.

Respectfully submitted.

L. Emmett,
Territorial Librarian.

THE NEW CAPITOL.

Office of the Capitol Rebuilding Board,
Santa Fe, N. Mex., September 8, 1900.

Sir: The capitol rebuilding board has the honor to respectfully report that, with the exception of a few minor details and of its last meeting when all its affairs and business will be concluded, it has practically completed its duties. At the last meeting of the board detailed statements of all receipts and expenditures since March 1, 1900, at which date the last report and accounts were rendered to your excellency, will be furnished, together with the final report, and thereupon all the books and papers of this board, in its possession, will be duly delivered to the secretary of the Territory.

For the reasons fully set forth in the report of this board to your excellency, dated December 31, 1898, it was found impossible to complete and furnish the capitol at a cost within the appropriation of $75,000, provided for by chapter 39 of the laws of 1895, but of which sum 2½ per cent was found necessary and requisite by the treasurer of the Territory, as duly authorized by the law, to expend in floating such bonds, so that this board received for the purposes of the appropriation the sum of $73,125, instead of the full $75,000. These bonds were sold in two parcels, the first yielding, net, $67,275, which was placed to the credit of the capitol rebuilding fund on May 20, 1897, and the second parcel yielding $5,850 net, which was placed in the same fund on July 10, 1897, making, together the sum of $73,125, above mentioned. Chapter 9 of the laws of 1895, making such first appropriation of $75,000, was approved on February 5, 1895, but it was not until January 15, 1897, that the act of Congress validating the bonds became a law, and from that date until July, 1897, no market could be obtained for the sale of the bonds. It therefore follows that from March 2, 1895, when this board was first organized, until May 20, 1897, it had no funds available to proceed with the rebuilding of the capitol, and had the public-spirited citizens of the city of Santa Fe not contributed the preliminary fund of $2,550, mentioned in the report of this board to your excellency, of December 31, 1898, no progress whatever toward the rebuilding of the capitol could have been made. It is but fitting in this report to give the names of all the parties who contributed to that important preliminary fund. They are as follows: J. R. Armijo, H. B. Cartwright & Bro., Right Rev. Archbishop P. L. Chappelle, C. W. Dudrow, the First National Bank of Santa Fe, Marcelino Garcia, George W. Knaebel, Johanna Kahn, N. B. Laughlin, New Mexican Printing Company, L. Bradford Prince, A. Staab, Seligman Bros., Solomon Spiegelberg, J. G. Schumann, S. Spitz, W. T. Thornton, and George L. Wyllys, and the thanks of the Territory are due to them, one and all.

Section 3 of chapter 39 of the laws of 1895 of the Territory, creating this board and providing for the rebuilding and refurnishing of the capitol, reads as follows:

"That the said capitol rebuilding board shall have full power and authority to reconstruct, rebuild, and furnish said capitol building, and to do and perform any and all things necessary and proper for such purposes, but they shall reconstruct and rebuild the same upon the same foundation and upon the same plans that the former building was, as far as in their judgment may seem proper, and for the best interests of the Territory and most convenient for the structure of the said building."

This board found the old foundation unsound and not fit to be built upon, and, pursuant to its powers contained in the law mentioned and particularly in the section thereof above quoted, it found it necessary to have built an entire new foundation, so that the building throughout is now independent of any part of the old structure with the exception of a part of the stone used in the old foundations and walls, but above the first story of the new building new material in every respect had to be used.

As stated in our report to your excellency of December 31, 1898, it was doubtless assumed by the framer of the act of 1895 that the penitentiary would furnish for the rebuilding of the capitol not only the common labor necessary, but also the requisite skilled laborers, and because of that intimation, if not assurance, in the act this board relied upon procuring from the penitentiary all the skilled labor required; but in that regard it was disappointed, for the skilled labor furnished by the penitentiary, as stated in our report of December 31, 1898, was very little, with the exception of stonecutters, who rendered most valuable service. The plans adopted were based upon such reliance in obtaining the necessary skilled labor from the penitentiary, and when this board found that such skilled labor could not be had, in order to keep within the first appropriation of $75,000, it would have become necessary to change the plans and erect a structure which would have been a monument to the retrogression of the Territory and a disappointment to its people instead of such a building as the law contemplated and the taxpayers expected. We therefore, in our report of December 31, 1898, referred to, called the attention of your excellency to the necessity of an additional appropriation of $60,000, and with the valuable assistance and cooperation of your excellency such an additional appropriation was provided for by the legislature of the Territory under chapter 9 of the laws of 1899, approved February 8, 1899, and soon after validated by act of Congress, and in due time the bonds for this additional appropriation of $60,000 were readily sold, and at a premium of $802.50. The interest on such $60,000 provided by the act was but 4 per cent per annum and yet they brought a premium of $802.50, while the first issue of $75,000, although the rate of interest thereon was 5 per cent per annum, sold after great delay and difficulty at but par, and 2½ per cent thereof had to be paid for brokerage or expenses in order to accomplish the sale. It is true that at the time the $75,000 of bonds were marketed the financial condition of the country was not as good as it was when the $60,000 of bonds mentioned were sold, but still we are of opinion that such financial condition last mentioned was not the only reason the $60,000 in bonds, bearing but 4 per cent interest, brought the premium mentioned, and we flatter ourselves that the beautiful capitol of our Territory, with other improved conditions in our Territory pointing to enterprising progress, induced the paying of the premium on and the ready sale of the bonds. The expenses of the sale of such $60,000 bonds were but $10 through the kindness of the First National Bank of Santa Fe, through which institution a delivery of the bonds to the purchaser was made. The customary prices for delivery of bonds of the character of the $60,000 bonds referred to were very much greater than the nominal charge of $10 made by the bank mentioned, and this board, for itself and in behalf of the Territory, duly appreciates the kindness and courtesy of the First National Bank of Santa Fe in lending its aid so generously in the speedy delivery of the bonds, the proceeds of which, amounting to $60,792.50 net, were covered into the treasury of the Territory to the capitol rebuilding fund on July 15, 1899.

This board has the distinguished honor of further reporting to your excellency that, with appropriate ceremonies, it delivered the new capitol, completed and refurnished, on the 4th day of June, A. D. 1900, to your excellency, for the Territory, and that thereupon the building and premises were placed in the custody and charge of the honorable the capitol custodian committee. The structure speaks for itself, and from the expressions of praise from every source we are pleased to report it is a pleasant surprise and a great satisfaction to the people of our Territory and a monument to its progress as well as one of the many evidences of the rights of the Territory of New Mexico to statehood without further delay. In this connection we are gratified to add this board has successfully striven to keep within the additional appropriation, and that instead of there being a deficiency there will be, we hope, a small surplus to turn over to the capitol custodian committee for the purpose of defraying the expense of completing the beautifying of the grounds and a few small details which it is impracticable for this board to give attention to.

Total amount covered into the capitol rebuilding fund		$133,917.50
Proceeds of the first appropriation of $75,000	$73,125.00	
Second of $60,000	60,792.50	
		133,917.50
Disbursed by board for all proper purposes to the date of this report		133,010.12
Balance on hand in such capitol rebuilding fund		907.38

There are yet some outstanding accounts against this board, and also in its favor, and it is hoped such accounts as may be due to the board will be paid and the outstanding accounts against the board settled at its final meeting.

All accounts against this board, audited and paid, are fully itemized, and copies thereof retained on file, with the other records and papers of the board. The original accounts are all duly approved by Messrs. I. H. and W. M. Rapp, the architects and superintendents, and by the president and secretary of the board, and are always open for the inspection of any person or persons desiring to see the same, the originals being on file in the office of the Territorial auditor.

In our reports to your excellency heretofore have been attached, and in our final report to your excellency there will also be attached, detailed statements or tables showing the number of each voucher or account audited, allowed, and paid, the number, date, name of the person or party in whose favor the same is, and what it is for.

To the date of this report this board has audited, allowed, and issued fifteen hundred and thirty duly certified and approved accounts or vouchers.

The dedication ceremonies of the new capitol were held on the 4th day of June, A. D. 1900, and were quite imposing. A great many people from all over the Territory and elsewhere attended such ceremonies. A joint committee, consisting of Messrs. R. J. Palen, William H. Pope, and Samuel G. Cartwright of this board, and the full capitol custodian board, consisting of Messrs. Solomon Spiegelberg, George H. Wallace, secretary of the Territory, and Alfredo Hinojos, together with Solicitor-General Edward L. Bartlett, was duly constituted a committee of arrangements in such dedication, and that committee performed its arduous duties in a highly satisfactory manner. Mr. George W. Knaebel, the efficient clerk of this board, was appointed and acted as marshal of the day, and aided very successfully the committee on arrangements in their manifold duties. A large procession was organized and formed by the marshal of the day, and consisted of such marshal, Col. George W. Knaebel, and his chief aids, Maj. Frederick Muller and Mr. H. O. Bursum, and other aids at the head of the line, and was divided into three divisions. Almost all of the militia of the Territory took part in the procession, and in addition there were Carleton Post, No. 3, G. A. R., Department of New Mexico, and visiting comrades, and Department Commander John R. McFie, of the Grand Army of the Republic of New Mexico, and his staff; a large number of carriages, containing your excellency, Chief Justice William J. Mills, and the associate justices of the supreme court of the Territory, Solicitor-General Edward L. Bartlett, Hon. George H. Wallace, secretary of the Territory, the Most Rev. Peter Bourgade, archbishop of Santa Fe, the Rev. J. L. Gay, the members of the capitol custodian committee, the members of this board, Messrs. I. H. and W. M. Rapp, the architects, and many other prominent officials and citizens, the United States Indian school (of Santa Fe) cadets, led by their highly praiseworthy military brass band, the students of St. Michael's College, and many citizens in carriages and on horseback. There were three military brass bands in the procession, consisting of the band of the First Cavalry, New Mexico militia, the East Las Vegas military brass band, and the United States Indian school brass band mentioned, and their music was the admiration of all. The militia was placed under the command of Col. John Borrodaile, and Troop E, First Squadron Cavalry, New Mexico Militia, and Company I (Otero Guards), First Regiment New Mexico Militia, together with the band of the First Regiment Cavalry, acted as an escort to his excellency Miguel A. Otero, the governor of New Mexico. The procession started at half past 2 o'clock p. m. on June 4, 1900, and marched to the new capitol, where it was reviewed by your excellency and adjutant-general and staff and other personages, and at 3 o'clock p. m., in the beautiful and commodious hall of the house of representatives, the dedication ceremonies were held, the Most Rev. Peter Bourgade, archbishop of Santa Fe, leading in prayer, and Rev. J. L. Gay, closing. Chief Justice William J. Mills presided and made an eloquent address. President Francisco A. Manzanares, of this board, followed in a very appropriate speech, and at its conclusion formally delivered the building and premises, in behalf of the capitol rebuilding board, to your excellency for the Territory. Your excellency thereupon, in an eloquent and interesting speech, duly accepted the building in behalf of the Territory, and transferred the custody thereof to the honorable the capitol custodian committee, which committee, by Hon. George H. Wallace, the secretary of the Territory and ex-officio a member of the capitol custodian committee, duly accepted the custodianship in an appropriate address. Ex-Governor L. Bradford Prince then made an eloquent address, which enlisted the rapt attention of the large audience which crowded the hall. During the ceremonies of dedication the brass band of the First Cavalry and the East Las Vegas military band, which were both stationed in the hall throughout the ceremonies of dedication, discoursed appropriate music, rendered in an excellent manner, to the great delight of the listeners. In the evening the building was brilliantly illuminated by the electric lights in every room and hall and presented a most beautiful and attractive sight, the light on this occasion having been furnished, free of charge, by the Santa Fe Water and Light Company. During the evening a reception was held by your excellency, together with your staff and Adjt. Gen. William H. Whiteman, and was very largely attended. The building was thronged with a great multitude of people, many in evening dress, who paid their respects to your excellency and staff. All the many rooms and corridors were brilliantly lighted, and there were many gentlemanly ushers and pages, provided by the committee on arrangements, who all took special pains to show the rooms in their charge and answer all inquiries. The reception was had in the main corridor of the second story of the building, and during the evening the East Las Vegas military band rendered most excellent music from its position in that corridor and the First Regiment Cavalry band in the hall of the house of representatives. The multitudes attending the reception passed all through the numerous rooms of the building many times and lingered here and there admiring the same and listening to the beautiful music. All were delighted, and the occasion will be one that will never be forgotten by those who attended it. The only regret was that New Mexico had not been admitted into the sisterhood of States, as by right she should and ought to have been long ago.

In order that there may be a record of the description of the new capitol, we deem it proper to here give a brief description. The structure is a massive one of stone, brick, and steel, and an example of modern classical architecture, and reflects great credit on the taste, skill, and ability of the architects, Messrs. I. H. and W. M. Rapp, of East Las Vegas, N. Mex. The main façade is approached by a broad terrace to the flight of steps leading to the portico, which, with the six fluted columns with Ionic capitals, supporting the enriched pediment, the tympanum of which is carved with the coat of arms of the Territory, form a graceful and imposing entrance becoming to the first building of the Territory. There are two other entrances in the main façade; also one at each end of the building.

The first story is of buff cut stone, above which the walls are of buff Roman tile, with a heavy cornice and enriched frieze girdling the entire structure.

Over the central portion of the building is a dome, resting on a massive die, intended to receive the different groups of statuary to be added from time to time in keeping with the growth of the Territory. Surmounting the dome is a group of columns, forming the lantern and supporting the flagstaff.

The appearance of the building is most artistic and pleasing to the eye, and occupying an advantageous position in the midst of the beautiful capitol grounds, surrounded, as it will be, by well-kept lawns, trees, and shrubs, with mountains in the background and the dark-blue cloudless sky of the future Sunshine State overhead, forms a picture that one might search for and not find surpassed.

Halls, corridors, and stairs.—On entering the building from the portico one passes the vestibule, on one wall of which is the bronze tablet carrying the names of the officials connected with the construction of the building. Dividing this entrance from the main hall are magnificent doors, with plate-glass panels and handsome brass fittings. On passing through these doors one is impressed with the size and beauty of the corridors, which traverse the entire length of the structure. At the juncture of the walls and ceiling is an extremely ornate stucco cornice, in the treatment of which the beautiful egg and dart and dentil courses show to their best advantage.

The ceiling is further relieved at intervals by beams crossing from wall to wall, carrying this same enrichment, and in conjunction with which are smaller beams, also ornamented, interlacing each other and forming a succession of panels the entire length of the corridors.

At the walls directly underneath these large cross beams are the numerous Doric pilasters resting on the molded marble pedestals, which, membering with the Messinian marble wainscoting, continue around the corridors and up the stairways. The floors of all the corridors are of Mosaic marble, with white field and Greek fret border in dark marble, with line on each side of dark Champlain marble. These floors are broken into mats or squares conforming exactly with the pilasters and the beams of the ceiling.

At either end of the building are the staircases extending to the third story and to the gallery of the house of representatives. These stairways, with their beautiful newel posts of small fluted Ionic shafts and the perforated grills in pure Greek design forming a balustrade, are cast iron, finished in electrobronze, and with the Italian marble steps form a most imposing piece of architecture, and the effect of lightness combined with strength is in this instance most successfully carried out.

Governor's rooms.—On the first floor in the southwest corner of the building are the apartments designed for his excellency the governor of New Mexico. These rooms are finished in golden oak with paneled ceilings and ornamented frieze, and are encircled by a heavy wainscoting supporting the pilasters to the ceiling and forming an imposing finish for the various openings. The floors are of polished quarter-sawed English oak.

Adding to the attractiveness of the reception room is a fireplace with appropriate fittings, the carved mantel harmonizing with the rich and handsome furnishings of the room. The furniture of these rooms is mahogany, the various couches and easy chairs being upholstered in leather, and the desks being models of elegance and convenience. The oriental rugs and the hangings add the needed touch of color, and the massive old brass electroliers are works of art and at night flood the rooms with a glow of light.

Secretary's rooms.—Immediately across the corridor from the governor's rooms is the suite prepared for the secretary of the Territory, the Hon. George H. Wallace being the present incumbent. This suite consists of a large reception room, private office, clerical office, and a large and capacious vault with ample room for the valuable and important documents and papers belonging to this department. These rooms are finished throughout in dark quartered oak, the floors are of hard wood, the whole effect being very rich and handsome.

The furniture is of oak, everything needful for the comfort and convenience of the occupants being provided.

Treasurer's rooms.—In the northwest corner of the building are the rooms arranged for the use of the Territorial treasurer. The private office is tasteful and comfortable, with its fireplace with tiled facings and handsome hard-wood mantel, bright rug, easy chairs, and convenient desks. This room connects by double arches with the outer office, the occupants of which are separated from the public by oak screen partition with necessary counters over which the general business is transacted. In connection with this department is a commodious fireproof vault.

Auditor's rooms.—Opposite the treasurer's office and across the corridor are the rooms of the auditor. This suite consists of private and clerical office, with large vault. The finish and furniture of these rooms is of oak and tasteful in design.

Land commissioners' rooms.—Adjoining the auditor are the rooms occupied by the land commissioners. This suite consists of two rooms with vault, all finished and furnished in oak in a manner both attractive and substantial.

Adjutant-general's rooms.—The adjutant-general has two rooms on the east side of this floor, handsomely finished in oak and furnished with everything needful to the department of this official.

Superintendent of public instruction.—In the center of the building on the east side of the first floor is the room assigned to the superintendent of public instruction. The finish of this room is of quartered oak, and the furniture includes bookcases, desks, chairs, and tables suitable to the requirements of the office.

The remaining rooms on this floor consist of two unassigned offices, a public toilet room, and a ladies' toilet room, marble tiled, with massive marble partitions.

Second floor.—The second floor is assigned to the council chamber, the supreme court rooms, the offices of the clerk of the supreme court, the private rooms of the justices of the court, the offices of the solicitor-general, and the Territorial law library.

Council chamber.—The council chamber occupies the entire north end, and is a large lofty room extending through two stories. The treatment is renaissance, with massive beamed, arched, and coffered ceiling, each panel being studded with electric lights in rosettes. Under the ceiling is a handsomely ornamented cornice, supported by perfectly proportioned fluted pilasters resting on the bold paneled pedestals, which form an important factor in the general finish and beauty of the room. These fluted shafts, placed at intervals around the walls, extending to the ceiling, are terminated with their handsomely carved classical capitals, and contribute materially to the completeness of the design. The balcony for the public is in the rear of the chamber, directly opposite the president's desk, and is entered immediately from the main corridor on the third floor. The front of the balcony is shaped to a graceful curve and enriched with carved moldings forming a paneled effect, each alternate panel carrying a triple torch of electric light, and the whole terminated with a line of Greek fret border. The balcony is furnished with opera seatings arranged in tiers on terraces, thus affording a perfect view of every visitor. The ceiling under the balcony is laid off in panels of carved-wood moldings. The desks for the president and clerk are handsomely carved pieces of furniture, and the chairs for the president and his guests correspond in carving and are upholstered in maroon leather. Appropriate desks and revolving chairs are provided for the members and are arranged in terraces, each desk directly facing the president. The doors opening from this chamber are upholstered in maroon leather studded with brass heads forming a wreath and festoon. The floor covering is dark, rich red, which harmonizes with the color scheme of old ivory and gold in which the room is finished, and whether seen by day with the sunlight streaming in through the large, handsome windows, or by night with the room flooded by the soft glow from the myriad electric lamps, the effect is very beautiful. Immediately back of the president's platform, and also from the corridor, you enter the council lobby. This lobby is finished throughout in quartered golden oak, has a large tiled fireplace with hard-wood mantel, and is furnished with settees, armchairs, and couches, making pleasant retiring quarters for the members during recess.

From this room you enter the post-office and the reading room, both devoted to this branch of the legislature. In connection with this lobby are rooms for the clerical force and committees appropriately and nicely furnished, a vault for the safekeeping of important papers and records, and a marble-tiled and marble-partitioned toilet room for the exclusive use of the members. Directly off this lobby is a small hall containing a private stairway, shielded by a handsome screen, which leads to the four committee rooms for the use of the council and the private office for the president of the council.

Library.—In the center of the building, on the east side of this second floor, directly facing the main entrance, is a large, light, pleasant room devoted to the Territorial library. Here are to be found the book stacks and cases, arranged in alcove form, containing the law library. The capacity of the stacks at present is 10,000 volumes, and it can be increased to accommodate many more as necessity arises.

Every care has been successfully taken to provide this room with ample light, and with the large reading tables and comfortable chairs the room is one of great attractiveness. The entire south wing or end of the second floor is devoted to the supreme court, private room for the judges, and a room for the clerk, with a large vault for the preservation of records and papers.

Supreme court room.—This room is one of the handsomest in the building, and is a very large, almost square, apartment, well lighted from the south and east. A heavily molded cornice covers the beams that carry the ceiling, which are supported by massive columns with enriched capitals. The finish of the room throughout is quartered golden oak with dull satin polish. The judges' bench, with chairs for the chief justice and associate justices, stands upon a dais. Directly in front of the bench are two tables, with a number of easy chairs for the use of the members of the bar. Then comes the rail separating the members of the bar from the general public. The space for the public is filled with opera seatings. The judges' chairs are handsomely carved and upholstered. The space behind the bar rail is richly carpeted in shades of golden brown, which, blending and harmonizing with the color of the woodwork and furniture, completes the great elegance of the whole effect. Leading directly from the court room is the clerk's office, which is conveniently fitted up for its purposes, with a counter and rail dividing the office into private and public sections. The room contains a handsome fireplace, desks, chairs, and all necessary furniture. The judges' rooms are finished in oak, with tiled fireplaces and quartered-oak mantels, each room having the floor covered with bright rugs and being furnished with desks, revolving and wall bookcases, couches, and easy chairs. Accessible to the rooms is a private toilet room.

The solicitor-general's office.—The suite of rooms constituting this office is on the right of the main entrance, in the second story. The fittings and furniture are very handsome and complete. Bright rugs cover the floors, and, with the revolving and wall bookcases, desks, and all other furniture in oak, present an appearance that is unusually pleasing.

House of representatives.—The entire third floor, excepting the north wing, is devoted to the use of the representatives, the main legislative hall occupying the central portion of the building, and the north wing contains the lobby, speaker's private room, post-office, clerk's office, committee rooms, and coat and toilet rooms. One of the most beautiful and spacious rooms of the building is the lobby and smoking room for the members of the house of representatives. While the room is large, it is suggestive of coziness, in that it is partially divided by two rows of large fluted oak pillars. The generous tiled fireplace, with mantel carrying out the same design used in the room, with broad shelf supported by pillars carved to match those used in the room, the hard-wood floors covered with bright rugs, together with the luxurious furniture, can not help but impress one that everything possible has been arranged for the comfort and convenience of the members.

Assembly hall.—The largest, most capacious room in the building is the assembly hall for the house of representatives. Harmonious in style, coloring, and proportion, it vies with the council chamber in beauty and makes the awarding of first choice a hard matter. One views with pleasure the rich color of the woodwork, the beautiful ceiling with the arched cove, and the arcaded balcony, and is almost ready to proclaim this the favorite, when the vision of the council chamber, with its beautiful lines and chaste ornamentation and coloring, rises before the mind's eye, and one is forced to admit that each room is so well designed and treated that it is perfect of its style, and the choice between them would be a matter of taste with the beholder.

In architectural treatment the Italian renaissance predominates in this room, the numerous groups of two and three pilasters, with their delicately outlined and carefully modeled capitals, the rich frieze embellished with the lines of carved molds, and at intervals at the pilasters, with the groups of wreaths and festoons, form a bold and appropriate support to the heavy cove and grained ceiling.

The prominent beams traversing the ceiling each way, carrying the familiar and beautiful golosche design, intersect each other with perfect precision, while the shadows of the deep coffered panels exaggerate their depths and throw into bold relief their delicate detail.

The central feature of the ceiling is the flat dome effect so artistically treated in stucco, with its many ribs converging to a circle studded with electric lights, which form a brilliant border to the panel of art glass.

Across the rear portion of the hall, and extending through the arcade, is a terraced balcony for the public, reached directly by stairs beginning at the platform entrance to the house of representatives, at the top of the west main stairway. The front of the balcony is in itself a work of art. Treated in stucco, its dainty fluted pilasters and molded panels supporting the mahogany rail upon the richly ornamented base, with the arches of the arcade in the background, and molded soffits, produce an effect which, seen from the speaker's platform, is one of great beauty.

The alcove, with arch overhead, which forms the back of the speaker's platform breaks the wall opposite the balcony and adds a touch of variety.

The entire finish of the hall is of mahogany, carrying out in its design the main lines and part of the ornamentation used in the frieze.

The chairs for the speaker and guests and the three massive desks are of the same beautiful wood, matching in design and color the general finish of the room. The desks and seats for the members are arranged on the terraces in such manner that each is in direct line with the speaker.

The doors are upholstered in leather, with plate-glass medallions and ornamented with brass.

In addition to the lights in the dome, the ceiling is studded at intervals with groups of electric lights, and around the walls, between the pilasters, are double lights in the form of torches.

The promise of the exterior is more than fulfilled in the interior of this noble building, and one feels impressed with the idea that the architects have not neglected or overlooked the slightest detail, but have given their very best and most constant thought to the designing and construction of a building that is perfect, complete, and harmonious in every point.

Electric wiring.—The wiring of the building was executed by the Doss Brothers' Electric Construction Company, of Denver, under the special direction of the architects. On each floor there are two cut-out cabinets containing switches for main line and distributing circuits. These cabinets are lined with marbleized slate and are under lock and key.

In the basement is a 500-light transformer, where the current is reduced from 2,200 to 110 volts. Where the wires run through masonry, they are contained in brass-armored conduits; where they run through wood or plaster, they are supported on noncombustible insulators or wiring tubes. The wire used throughout is 98 per cent pure copper and covered with an insulation known as okanite and an additional braided protection.

All the lights in the ceilings are controlled by flush switches.

Fixtures.—The electric fixtures were executed from special designs and were manufactured by the Mitchell & Vance Company, of New York. They are in old brass, and are works of art. The corridor electroliers of the first floor are all ceiling cluster lights, as are also those in the vestibules.

The two and three light brackets of the council chamber and house of representatives are executed in the torch effect. All other fixtures extend down from the ceiling. The portico is lighted by four large globes, 18 inches in diameter, containing four 16-candlepower lamps each.

The street or buttress lamps are beautifully executed in wrought iron, and each contains 36 lamps, inclosed in ground-glass globes.

There are between 800 and 900 lights in the building. The placing of fixtures was done by the Santa Fe Water and Light Company, who are to supply the current for the lighting of the building until such time as the penitentiary may be able to supply it, as provided by the laws of 1899.

Plumbing fixtures.—There are 26 fixtures in the building, which were manufactured by the L. Wolf Plumbing Company, of Chicago and Denver. The closet stalls are of marble, with nickel-plated trimmings throughout.

There is a circulating hot-water system connecting with all lavatories.

The heating and plumbing contractors were St. John Brothers, of Colorado Springs, Colo.

Ventilating system.—The building is arranged for a complete system of ventilation. The fresh-air ducts enter the different rooms at a point 8 feet above the floor. The foul air is taken out near the floor and carried out at the top of the building.

The fresh air is taken in directly under the front steps, and the air is to be first warmed, then forced into the different apartments by a fan propelled by a motor.

Plumbing.—The plumbing being one of the most important features of the new building, a short description no doubt will be interesting.

The water is brought in the basement of the building through a 4-inch cast-iron main from the main supply. A 2-inch line of pipe is carried to wrought-iron tanks in the attic of each wing. These tanks each hold 3,500 gallons and fill with water automatically through pipes connecting with the tanks. Also, with the main 4-inch supply is a 2-inch line of pipe running from the basement to the roof in each wing, with outlets for hose connecting for fire protection in each floor. At each outlet (there being seven in all) is a nickel-plated hose rack containing 75 feet of the best 2-inch linen hose, with nickel-plated nozzles and connections for each outlet. In the event the water should be shut off from the main, there would be ample water in the tanks to protect the building against fire.

The building is heated by the low-pressure steam system. The boilers are located in the boiler room, in the basement, and are two in number, 42 inches in diameter and 12 feet long.

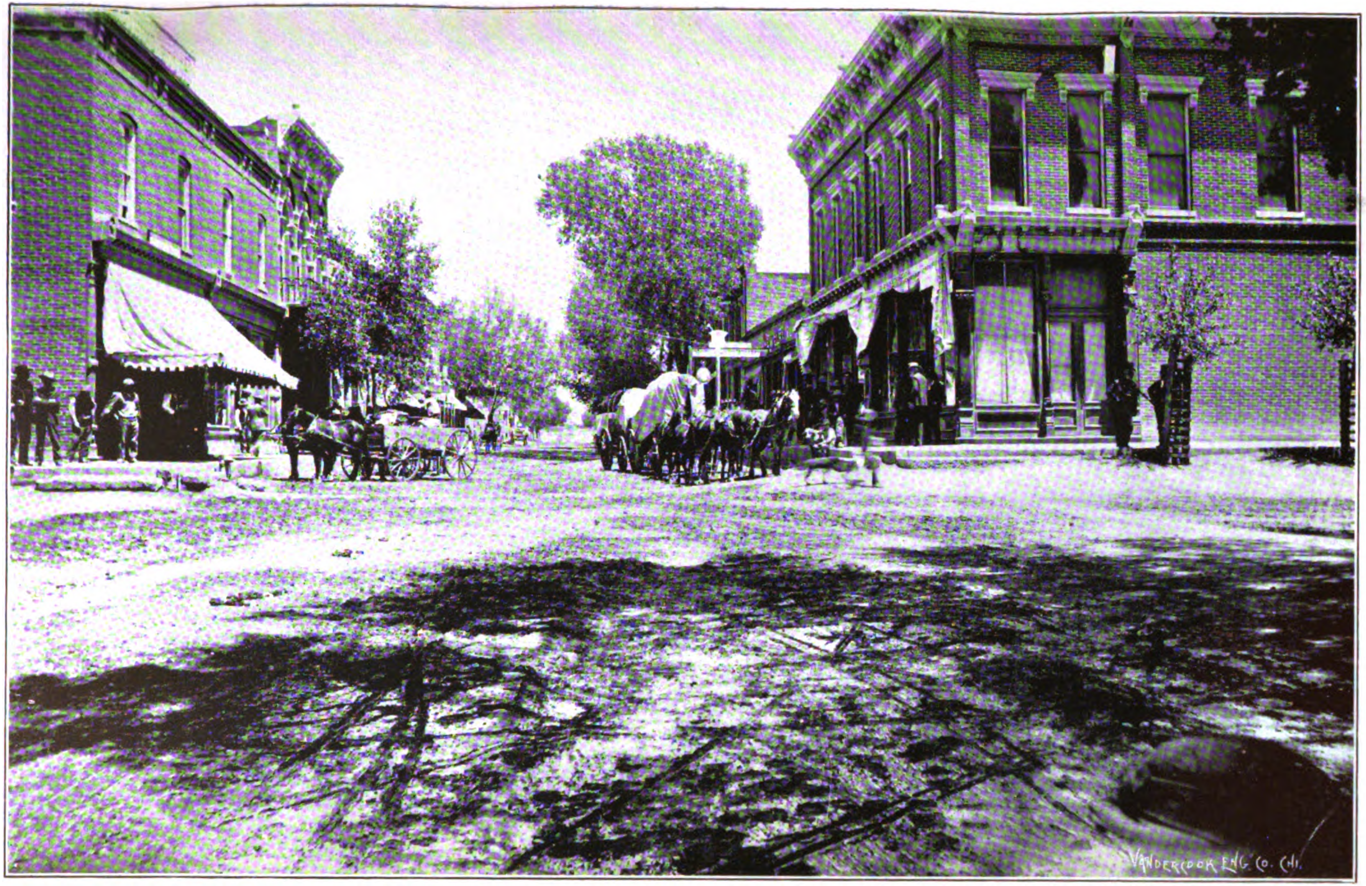
There is about 5,000 feet of radiation in the building and, with the exception of extreme cold weather, one boiler will be sufficient to heat the building. The apparatus is noiseless and a success in every respect.

It is a matter of fact that the capitol furnishings could be and were supplied largely by a business house in the Territory, as has been done so successfully by Mr. Charles Ilfeld, of Las Vegas, who secured the contract for carpets, shades, and a considerable part of the furniture in competition with the heaviest dealers, both East and West.

Plate glass is used in all windows and doors. This was furnished by H. G. Coors, esq., of Las Vegas.

The metal work on the dome was done by Mr. C. W. Fair, of Denver, and on the roof, etc., by the Willis Manufacturing Company, of Galesburg, Ill. The Philip Rinn Company, of Chicago, were the contractors for the interior wood finish, and the Sayre-Newton Lumber Company, of Denver, for the book stacks and cases and other fixtures. The remainder of the furniture was contracted for and delivered by the Scarritt-Comstock Furniture Company, of St. Louis, Mo., with the exception of the furnishings in the governor's rooms; the furniture in those rooms having been purchased from Messrs. A. A. Andrews & Co., of Chicago, and the rugs and hangings of the Los Angeles Furniture Company, of Los Angeles, Cal. The contractor for the iron stairways and for the iron lamps on the buttresses was the Chicago Ornamental Iron Company, and the Art Marble Company, of Chicago, was the contractor for the marble treads and tiling. The scagliola wainscoting was contracted for by the Florentine Scagliola Company, of Chicago. P. & F. Corbin, of Chicago, were awarded the contract for hardware; the Victor Safe and Lock Company, of Cincinnati, Ohio, for the vault doors and facings, and the Interior Wood Working Company, of Chicago, for the beautiful hard-wood mantels. The Kenwood Bridge Company, of Chicago, was awarded the contract for the steel trusses in the dome. The St. Louis Expanded Metal Fireproofing Company furnished the greater portion of the metal lath used through the building, and the Thorne & Hunkins Lime and Cement Company, of St. Louis, Mo., furnished the plaster and cement. The contract for the chipped glass for the dome was let to the Drey & Kahn Glass Company, of St. Louis.

All of these contractors were the lowest bidders and have performed their duties,



STREET SCENE, SILVER CITY.

respectively, in letter and spirit. The cement walks in front and on the sides of the building were laid by Mr. James McCorriston, of Albuquerque.

We are pleased to report that according to prevailing prices at the time of the awarding of the several contracts, we obtained in every instance the bottom prices.

A stone saw and some derricks and tools for which this board had no further use and which cost about $500, but which we could not sell at an adequate price, we have delivered to the superintendent of the penitentiary for the use of that institution.

This board, duly appreciating the most valuable and hearty cooperation of your excellency in all its labors, and also the cooperation of the Atchison, Topeka and Santa Fe Railway Company, and of the Denver and Rio Grande Railroad Company, particularly in granting to this board reduced freight rates, and also appreciating the cooperation of the superintendent of the penitentiary and others, at its last meeting passed a unanimous resolution of which the following is a copy:

"Moved and seconded and unanimously carried that the secretary, with the assistance of the clerk, prepare and send suitable resolutions of thanks for valuable assistance and cooperation in the work of this board to his excellency, Miguel A. Otero, governor of New Mexico; to the Atchison, Topeka and Santa Fe Railway Company; to Mr. H. S. Lutz, the agent of that railway company at Santa Fe; to the Denver and Rio Grande Railroad Company agent, Mr. T. J. Helm, its agent at Santa Fe; to Hon. H. O. Bursum, the superintendent of the penitentiary; to the Santa Fe Water and Light Company for its great generosity in supplying such brilliant lights and so many of them, free of charge, on the evening of the dedication of the new capitol; to Messrs. I. H. & W. M. Rapp, the competent and trustworthy architects; and to Mr. George W. Knaebel, the efficient clerk of this board."

Very respectfully submitted.

THE CAPITOL REBUILDING BOARD,
By F. A. MANZANARES, *President.*
WM. H. POPE, *Secretary.*

HON. MIGUEL A. OTERO,
Governor of New Mexico, Santa Fe, N. Mex.

In transmitting the very complete and satisfactory report of the capitol rebuilding board, I deem it my duty to publicly acknowledge the obligations which the Territory of New Mexico is under to the gentlemen comprising that board, to the architects, I. H. & W. M. Rapp, and to Col. George W. Knaebel, the exceptionally efficient clerk of the board. They have all worked together in harmony, with the sole view of producing for the Territory the best possible results for the small amount of money which was at their disposal for the purpose. Each member of the board served as such for more than five years without any compensation whatever, or even being reimbursed for personal expenses while attending to his duties at Santa Fe, although two members of the board reside many miles distant and had to attend such meetings at great loss of time and expense. The clerk to the board is a lawyer in active practice, but gave his time and legal knowledge outside of his duties as clerk, so that the board was not required during the five years of its active labor to obtain any other legal services in connection with the preparation and carrying out of the numerous and important contracts for work of this magnitude. The work of the board was attended with many embarrassments which could not have been anticipated. The stone with which it was expected the building would be constructed could not be found, the quarry having become exhausted. Skilled labor could not be obtained at the penitentiary, as had been expected, and had to be largely imported at great expense. The convict labor, which it was expected would be free, actually cost more than $7,000. The price of all materials was largely advanced during the construction of the building, so that special care and management were necessary so as to accomplish its completion within the limits of the appropriation. This was, however, done, giving to the Territory a capitol building which would be a credit to any State in the Union, and which we consider a fitting monument to the intelligence and progress of our people. Not only was the capitol building proper completed within the limits of the appropriation, but it was completely furnished, broad cement walks laid, and handsome iron gates provided for the west entrance, so that on June 4, the day on which the building was formally turned over by the rebuilding board to the capitol custodian committee, it was ready for use and within a week all the Territorial officers had moved into it, and there is no request for an appropriation "to complete" the structure.

THE PENITENTIARY.

New Mexico Penitentiary,
Santa Fe, N. Mex., September 1, 1900.

Sir: Complying with your request, I have the honor to herewith submit report of the condition of the New Mexico penitentiary as follows, to wit:

On September 1, 1899, there were confined 183 convicts; have received since that time 127, making a total of 310; 93 of this number have been discharged during the above period and 3 have escaped, leaving at the present time 214.

IMPROVEMENTS.

The improvements for which money has in a large measure been expended, apart from the labor of the convicts, since the present management assumed control are as follows: House cleaning and repairs on main building; establishment of a hospital ward, with iron spring cots, mattresses, pillow cases, pillows, sheets, and closet; cleaning, painting, and repairing cell house; 1 C. W. Raymond & Co. brick machine and repress; 1 Standard Dry Kiln Co.'s dryer; 1 patent downdraft round brick kiln; 1 patent downdraft square brick kiln; 1 new Ames boiler and settings; 1 set tools and fixtures for tin shop; 3 pair large American mules; 4 3½-inch wagons; 1 transfer wagon, light; 1 buggy; agricultural implements; 1 Knowles steam pump, pipe line to well, and pipe extension to pond; purchased and leased adobe-clay lands.

One dry pan clay crusher or grinder, which is being put in place. This will handle the mountain clays, from which the street paving brick and fancy sidewalk brick are made, which are far superior to anything of the kind made west of Kansas City, and not excelled even there; and being so much nearer the markets of the Southwest than those made in St. Louis, Kansas City, or Colorado, the expectation is fairly well sustained that a large production will at an early date be in demand. The difference in the price in favor of the home production gives confidence that brick paving will soon be adopted by municipal and corporate authorities as well as individuals and take the place of other material in paving their streets and sidewalks. Economy and good taste alike will make this course an obligatory one, and even now capable managers have taken the lead in selecting the handsome pressed and glazed brick made at this institution for their permanent improvements of the best and finest designs.

To furnish such steam as the brick machinery, dry pan, and dryer demands a new 80-horsepower tubular boiler, at a cost of $1,741, has just been set in place, and a stack designed to be 90 feet in height is now under construction, and is up to a height of 27½ feet above the base, having in that length over 50,000 brick.

The brickmaking machine has a capacity of 60,000 common brick per day of ten hours. The repress, through which the pressed building and figured sidewalk brick pass, 20,000 for the same length of time. As now arranged the working day of the average convict and the running time of the brick machinery is something less than eight hours.

With the new dry-pan grinder in place the power of the various parts of the machinery will be very near full proportion. Thus, the producing capacity of the whole will be much increased and the manufacture of the brick facilitated.

The management will soon erect more brickkilns for the burning of brick. Additions will be made from time to time and as required to meet the growing demand.

Work on the new extension of the cell house has been carried on since my last report, but has not been prosecuted vigorously on account of the pressing need of making many needed repairs, and also because of the necessity of completing the brick plant, which is already the pride of the taxpayers of the Territory, and which will no doubt go a long way to placing the institution on a self-supporting basis.

HEALTH AND DISCIPLINE.

At no time since my last report has there been any cause for uneasiness as to the health of the convicts. On the contrary, the general health has been good, and it is quite gratifying so to state.

Discipline has been successfully maintained without resorting to the severest punishment authorized by the honorable board of penitentiary commissioners—the spanking system—with a very few exceptions. This result is due to a general willingness on the part of the prisoners to perform the work assigned faithfully. Minor infractions of the rules are punished by the withdrawal of some privilege previously extended as a reward for more than average good conduct.

All the prisoners are regularly employed. There are none allowed to be idle unless when sick or for some other sufficient cause; the regular employment being one of the principal factors in maintaining good health throughout the institution and tends in a great measure to further the general discipline.

Respectfully submitted.

H. O. Bursum, *Superintendent.*

Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

BOARD OF HEALTH.

Taos, N. Mex., *July 4, 1900.*

Sir: The New Mexico Territorial board of health has the honor to submit the following report:

The general healthfulness of the Territory and climatic conditions has been such for the last year that there has been an entire absence of epidemics. The board has distributed, in Spanish and English, 2,000 copies of typhoid fever literature, and is happy to report that the dread disease (smallpox) at the present time is almost unknown in the Territory. The pamphlet treated of sanitary precautions and safeguards to be taken to prevent the disease, and also, if cases had occurred, what sanitary precautions should be taken to prevent its spread.

All the licensed physicians in the Territory have received literature treating of bubonic plague, instructions for isolating cases, and copies of the various treatments used in such cases, through the courtesy of United States Marine-Hospital Service. There was a systematic investigation made by the Treasury Department through "The leprosy commission," as to the existence of any cases of leprosy in the various States and Territories, and we are happy to report that no cases of this disease were found in this Territory.

During the last year there have been about 100 cases of smallpox in the Territory, but the board is not aware of the existence of a single case at this time. The mortality has been very small. General vaccination has been done all over the Territory, and we feel that the Territory is to be congratulated on the small number of cases. Most all the States and Territories, even Canada, have experienced a smallpox epidemic; in Ohio there were nearly 2,000 cases alone.

The board of health distributed 2,000 copies of smallpox pamphlets, as to diagnosis, treatment, isolation, and quarantine, and recommending vaccination; with results that intelligent people in isolated hamlets were able to handle cases properly.

Consumption.—The fresh-air treatment of consumption in such resorts as Ragaz, Davos, and Saranac have proven to be a success. The Lancet (London) recommends the keeping of tubercular patients out of doors for the entire twenty-four hours. No more suitable place as to climatic conditions, altitude, sunshine, or perfect drainage can be found on the American continent than New Mexico to-day.

The United States Government has recognized this fact by establishing a resort for its consumptive soldiers at Fort Stanton, N. Mex. As this Territory is fast becoming famous for its climate and many tubercular cases are coming here, the board has issued a circular on "Expectoration" to hotel and boarding-house keepers, to post in conspicuous places, and would recommend the following should be carried out in hotels, boarding houses, and other places of public entertainment:

It is the safer way to subject to a careful cleansing and disinfection all rooms that have been occupied by consumptives. Particularly in rooms where strict sanitary rules have been observed, the need of disinfection is emphasized by the fact that the germ of tuberculosis retains its infective powers a long while, under favoring conditions.

The bacillus of tuberculosis is hard to kill; use, therefore, only those disinfectants which are the most rapidly destructive of it when in its dry state. In fresh sputum the bacillus requires different treatment. In disinfecting a room that has previously been occupied by a consumptive, let the order of procedure be about as is recommended in the following, sorting out and disinfecting the clothing and other smaller things first:

(*A*) *Clothing.*—Disinfect with steam or by boiling. Boiling for half an hour will disinfect any article that can be subjected to that process. Steam disinfection for one hour, properly done, is just as trustworthy and has the advantage of wetting and shrinking fabrics less. Steam disinfection on a small scale can be done in the common wash boiler by supporting above the water, with two bricks or otherwise, a false flooring of laths or thin board. Pour in 2 or 3 inches of water, place the articles to be disinfected above the false flooring, put on the cover and steam one hour after the water begins to boil, keeping the water briskly boiling all the time. To insure certainty of success there must be a brisk fire and the steam must be kept steaming through the articles all the time. After the steaming, carry the boiler into the open air and throw the things over a line to dry. In every town and city a portable steam disinfector should be available. Clothing can also be disinfected by soaking it twenty-four hours in solution of 6 or 7. Then rinse thoroughly.

(*B*) *Bedding.*—Disinfect sheets, blankets, pillowcases, quilts, comforts, and spreads, as under (*A*). Pillows and feather beds are preferably disinfected with steam. They need not be ripped—the steam will penetrate. Empty straw beds, burn straw, and disinfect tick with steam as under (*A*). Burn cheap mattresses. A mattress worth the trouble may be disinfected with formaldehyde as follows: Make a tight box large enough to contain it; render it air-tight by pasting up all cracks and corners with stout, firm paper. Place the mattress in it and sprinkle or spray it with at least 4 ounces (1 gill) of formalin; put on the cover quickly, paste it up. Leave the mattress twenty-four hours. Or a mattress may be disinfected by spraying it with formalin and quickly and tightly wrapping it in large rubber blankets. Feather beds and pillows may be disinfected with formalin as is advised for mattresses.

(*C*) *Rugs and carpets.*—Burn old ones and all that can not be surely disinfected. Steam disinfection is the surest. When that is impracticable formaldehyde in concentrated doses, as for mattresses, may be used for valuable carpets or rugs.

(*D*) *Upholstered furniture.*—If the room can be disinfected with formaldehyde, spray or sprinkle the upholstered part with solution 7, just before the room disinfection, and leave in place. If formaldehyde gas is not available, spray or wash thoroughly with solution 7 or 6, then expose to the action of direct sunshine three or four days—the longer the better.

(*E*) *Rooms.*—Avoid raising a dust. If the removal of a carpet leaves dust on the floor, remove it after sprinkling wet sawdust or with damp broom or damp cloths. With a damp cloth remove dust from furniture and other surfaces. Boil all cloths thus used. If formaldehyde disinfection is available for the room, wash in solution 7 all surfaces of walls or furniture that may have been soiled with sputum. Wash or spray the floor with solution 7, letting the solution soak into the cracks well. Then fumigate with formaldehyde, letting the stripped furniture remain. If formaldehyde is not available, wash very carefully in solution 6 or 7 floors and all surfaces where exposed to the danger of soiling with sputum. Complete the disinfection of the room with liquid disinfectants, repeating the washing, the interval between the two washings not necessarily exceeding half an hour. For the disinfection of rooms with formaldehyde, the new vaporizer devised by Professor Robinson, in which formaldehyde solution is used, is recommended by the State board as a simple, compact, and efficient piece of apparatus. It vaporizes solution of formaldehyde instead of wood alcohol. At least half a pint of formaldehyde solution should be used for each 1,000 cubic feet of space. Keep the room closed at least eight hours. In preparing for formaldehyde disinfection, the room must be made as tight as possible by closing the mouths of chimneys, other ventilating openings, chinking, or pasting cracks, etc.

Solution 6: Corrosive sublimate, 1 dram; water, 1 gallon; mix and dissolve. Label "Poison." This is approximately a 1:1,000 solution. Its use should always be under the direction of some intelligent and careful person. This is not trustworthy as a disinfectant of fresh sputum. Destroys metals and gilding. Must be mixed in wood, glass, or earthenware.

Solution 7: Solution of formaldehyde (formalin), 6 ounces, water, 1 gallon; mix. This mixture contains a little less than 2 per cent of formaldehyde. (The Sanitary Record, London, England, May 25, 1900.)

There should be some adequate legislation in regard to the transportation through the Territory of dead bodies. The board has had valuable assistance from the New

Mexico Medical Society, which is composed of about 95 per cent of the licensed physicians in the Territory.

The restrictions set on the practice of medicine in this Territory have been carried out by the board with the result that the medical profession to-day contains men of professional ability and high integrity that will compare favorably with any of the Eastern States. The standard for the practice of medicine here is as high as any in the United States, and, although we are only a Territory, "quackery" is almost unknown.

The high standard of ethics of the American Medical Association is rigidly enforced, and the ranks of the medical profession are much cleaner than some of the States with older medical laws.

The next legislature should pass such laws as to make the New Mexico Territorial board of health a board in fact as well as name. Vital statistics should be kept, so that the world should know what a life-giving climate New Mexico is favored with.

Respectfully submitted.

T. P. Martin, M. D., *Secretary.*

Hon. M. A. Otero,
Governor of New Mexico.

BOARD OF PHARMACY.

Silver City, N. Mex., *December 1, 1899.*

Sir: I have the honor to submit herewith the tenth annual report of the New Mexico board of pharmacy to December 1, 1899.

Since my last report December 1, 1898, the board has held two meetings, one at Santa Fe, March 6 and 7, 1899, at which 4 applicants were examined, but 1 of whom was successful. Minor certificates were issued to 2.

A meeting was held at Las Vegas on October 4 and 5, 1899, at which 1 applicant appeared for examination, who was unsuccessful.

Other routine business transacted and various reports submitted, showing that the conditions were fairly satisfactory and that the provisions of the pharmacy law are being properly observed. A few instances of violation have come to the notice of the board, and due diligence has been exercised toward a satisfactory adjustment of the same. Lack of sufficient funds has always been a menace to the proper investigation of and adjustment of irregularities. However, in comparing the conditions of pharmacy in New Mexico with those existing in other States we find we compare very favorably in pharmaceutical proficiency and professional standing.

Appended hereto is a list of the registered pharmacists and minor pharmacists on our register at this date, also financial statement of secretary and treasurer.

Respectfully submitted.

W. C. Porterfield,
Secretary and Treasurer.

Hon. Miguel A. Otero,
Governor of New Mexico.

Financial statement.

1898.			
Dec.	1.	By balance on hand at last report	$153.40
Dec.	1.	By 74 renewal fees	148.00
Dec.	1.	By 20 examination fees	100.00
Dec.	1.	By amount received for advertisement in report	58.00
Dec.	1.	By 4 registration fees	8.00
			467.40

Financial statement—Continued.

DISBURSED.

1899.		
Jan. 1.	To 1 M envelopes printed	$5.00
Jan. 1.	To postage	3.00
Jan. 5.	To postage	1.00
Jan. 12.	To postage	2.00
Jan. 20.	To postage	1.00
Jan. 22.	To postal cards	1.50
Jan. 24.	To printing report, paid J. E. Sheridan	55.00
Jan. 24.	To printing envelopes	2.25
Feb. 7.	To postage	1.00
Mar. 4.	To stationery	.50
Mar. 15.	To printing cards, notices	2.00
Mar. 4.	To B. Ruppe, mileage, per diem, and postage	42.30
Mar. 4.	To A. J. Fischer, mileage, postage, and per diem	15.00
Mar. 4.	To E. G. Murphy, mileage, per diem, and postage	22.50
Mar. 4.	To W. C. Porterfield, mileage and per diem	50.50
Apr. 1.	To postage	3.00
May 1.	To postage	1.50
May 24.	To postage	1.00
July 1.	To postage	1.50
July 20.	To postage	1.00
July 25.	To postage	2.00
Oct. 5.	To B. Ruppe, mileage, per diem, and postage	24.60
Oct. 5.	To A. J. Fischer, mileage, per diem, and postage	20.90
Oct. 5.	To P. Moreno, mileage and per diem	44.40
Oct. 5.	To E. G. Murphy, mileage, per diem, and postage	10.00
Oct. 5.	To W. C. Porterfield, mileage and per diem	50.90
Nov. 1.	To printing receipt blanks, paid Walton	6.00
Nov. 17.	To postage	2.00
		373.35
	Dec. 1, 1899. Balance on hand	94.05

Summary of register.

Number of registered pharmacists at last report		88
Number of minor pharmacists at last report		13
Total		101
Registered since last report, registered pharmacists	27	
Registered since last report, minor certificates	5	
		32
Total		133
Canceled, all causes		45
Total registered		88

Registered pharmacists in New Mexico on December 1, 1899.

Name.	Residence.	Name.	Residence.
Abraham, E. G	Albuquerque.	Niemoeller, E. H	Albuquerque.
Bowman, Alex	Farmington.	Orton, L. S	Taos.
Becker, John	Belen.	O'Reilly, J. H	Albuquerque.
Borrowdale, M. W	Magdalena.	Porterfield, W. C	Silver City.
Byron, J. P	Deming.	Porterfield, M. W	Do.
Berry, J. C	Albuquerque.	Prewitt, F. E	Farmington.
Bohn, Carl H	Philadelphia.	Pring, E. J	Catskill.
Bird, Carl M	Roswell.	Pennewill, J. W	Silver City.
Brewer, Thos. B	Santa Fe.	Priest, E. C	Rincon.
Collins, Albert	Do.	Payton, B. D. W	Eddy.
Cassel, E. L	Deming.	Paden, M. W	White Oaks.
Christensen, Chris	Albuquerque.	Potter, H. L	Carlsbad.
Condit, E. G	Aztec.	Packart, H. M	Albuquerque.
Dawson, W. B	Kingston.	Ruppe, B	Do.
Driscol, Wm	Socorro.	Richards, Joseph	Cerrillos.
Davis, Bert	Hillsboro.	Reiling, A. H	Silver City.
Fischer, A. J	Santa Fe.	Robinson, L. B	Pinos Altos.
Forsyth, J. R	Albuquerque.	Ross, E. H	Albuquerque.
Goodall, K. D	East Las Vegas.	Roland, F. C	Hillsboro.
Goebe, Oscar	Belen.	Schroeder, J. B	Raton.
Grundle, M. R	Raton.	Salisbury, H. L	Do.
Griffith, H. M	Rawlins, Wyo.	Small, W. H	Lordsburg.
Howell, A. E	Socorro.	Schaefer, O. G	East Las Vegas.
Howard, John	Mogollon.	Seggerstrom, E. J	Catskill.
Hinch, F. E	Gallup.	Schmalmaack, F. W	Albuquerque.
Hernandes, M. P	Juarez, Mexico.	Simpson, J. H	Carlsbad.
Huber, Samuel	Raton.	Smith, Hugo Geo. A	Albuquerque.
Harrington, Fred	Roswell.	Sanders, Isidor	Trinidad, Colo.
Hilton, Emily K	Socorro.	Stolte, Geo. W	Carlsbad.
Hodges, J. R	Roswell.	Tomlinson, J. A	La Luz.
Hunt, R. A	Carlsbad.	Thomas, J. C	Cerrillos.
Heiberger, M. G	Grundy Center, Iowa.	Van Petten, R. J	East Las Vegas.
Ireland, A. C	Santa Fe.	Van Petten, H. S	Do.
Irvine, J. E	Deming.	Wegman, Martin	Chloride.
Jackson, W. L	Silver City.	Winters, D. C	Las Vegas.
Kinnear, Jas. A	Deming.	Walton, W. Y	Albuquerque.
Kremis, J. A	Springer.	Williams, Geo B	Do.
Kremis, W. H	San Marcial.	Wright, F. B	Do.
Kinsinger, Ed. D	Roswell.	Waldschmidt, C. H	Carlsbad.
Lane, A. G	White Oaks.	White, M. M	Santa Fe.
Laudenslager, A. E	Albuquerque.	Warring, T. A	Gallup.
Lane, H. B	Las Cruces.	Wolfe, H. A	Las Vegas.
Lane, B. E	Do.	Warren, E. W	Alamogordo.
Lester, G. E	Las Vegas.		
Lane, David W	Albuquerque.	MINOR CERTIFICATES.	
Murphey, E. G	Las Vegas.		
Malette, J. R	Albuquerque.	Butchofsky, L. M	Silver City.
Miller, C. C	Hillsboro.	Johnson, J. V	Chama.
Moreno, P	Las Cruces.	Heller, R. F	Cabezon.
McLean, J. W	Worcester, Mass.	Smith, W. C	Upper Penasco.
Mann, W. C	Norristown, Pa.	Finch, A. L	Bland.
McEwen, J. S	Carlsbad.	Laing, Lester	Silver City.
Myhre, O. G	Silver City.	Anderson, R. C	Central.
Miller, C. J	Albuquerque.	Delgado, Pablo	Santa Fe.
Mann, Robt	Do.	Ellison, J. C	East Las Vegas.
Mead, J. K	Bay City, Mich.	McClintock, A	Rincon.
Matthews, D. J	Albuquerque.	Smith, F. C	Albuquerque.
Nowers, L. E	Hillsboro.		

DUTIES OF THE SECRETARY.

It shall be the duty of the secretary to attend all meetings of the board and make a full record of the proceedings of the same; he shall keep a book of registration in which shall be entered the names and places of business of all persons registering under the pharmacy law; also specify such facts as said persons shall claim to justify their registration. The secretary shall prepare all certificates ordered by the board, and shall notify each member by mail of the meetings of the board, and do such other clerical work as the board may direct; he shall give such bond, to be approved by the board, as the board may from time to time direct.

He shall keep a full account of all moneys received and disbursed, and specify for what purposes, and make a full report of receipts and disbursements and amount of cash on hand at each regular meeting or whenever it is demanded by the board.

MEETINGS.

The regular meetings of the board shall be held semi-annually, as a majority of the board may direct, and at such place as they shall elect. Upon the written application of three members of the board the president shall call special meetings of the board, and shall cause notice thereof to be given to each member at least seven days in advance of such meeting.

STANDING COMMITTEES.

The committee on complaints and grievances: The duties of the committee on complaints and grievances shall be to carefully examine into all complaints and grievances made to the board pertaining to the violation of the pharmacy law, except adulterations and the sale of poisons. All such complaints and grievances shall be referred to said committee and a written report submitted thereon.

COMMITTEE ON ADULTERATIONS AND POISONS.

The duties of the committee on adulterations and poisons shall be to carefully examine into all complaints made to the board pertaining to violations of the pharmacy law in regard to adulterations and the sale of poisons; and all such complaints shall be referred to said committee and a written report made thereon before an analyst or chemist can be employed or any prosecution shall be ordered by the board.

COMMITTEE ON AUDITING AND FINANCE.

The duties of the committee on auditing and finance shall be to carefully examine into all claims presented to the board for payment, and to report upon the correctness and allowance of the same; to examine the books and accounts of the secretary and treasurer, and make recommendations as to the manner and form in which such books and accounts shall be kept; to report at the regular meetings of the board upon the condition of the books and accounts of the secretary and treasurer, the amount of receipts and expenditures for the fiscal year, and the amount of cash on hand.

RULES.

Rule 1.—Any member of the board may, upon presentation of credentials or other satisfactory evidence of capability, grant a temporary certificate, which shall expire at the next meeting of the board. It shall also be the duty of any member of the board, in his respective district, to see that all practicing pharmacists renew their annual certificates; and that they have a general supervision over their districts, respectively, and shall report all infractions of the law to the board and their action taken in behalf of the same.

Rule 2.—Registered pharmacists who change their location must report the same within ten days, giving their present address to the secretary.

Rule 3.—Proprietors of pharmacies not registered themselves, who conduct pharmacies under charge of a registered pharmacist, must report any change they may make in said registered pharmacist within ten days after such change occurs.

Rule 4.—This board will recognize certificates issued by other State boards which have been granted by examination wherein a grade of at least 75 per cent has been attained and a practical experience of at least three years is required. A certificate from the secretary of such board to that effect must accompany the application.

Rule 5.—This board recognizes diplomas from an incorporated college or school of pharmacy that requires a practical experience in pharmacy of not less than three years before granting a diploma.

NEW MEXICO PHARMACY LAW.

[Compilation of 1897.]

SEC. 3717. That from and after the passage of this act it shall be unlawful for any person not a registered pharmacist in the meaning of this act to conduct any drug store, pharmacy, apothecary shop, or store for the purpose of retailing, compounding, or dispensing medicines in the Territory of New Mexico, except as hereinafter provided.

SEC. 3718. That it shall be unlawful for the proprietor of any such store or pharmacy to allow any person except a registered pharmacist to compound or dispense the prescriptions of physicians except as an aid to and under the supervision of a registered pharmacist. Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and on conviction shall be liable to a fine of not less than five nor more than one hundred dollars.

SEC. 3719. The governor shall appoint five persons, all of whom shall have been residents of the Territory for three or more years and of at least eight years' practiced experience as druggists or phamacists, who shall be known and styled the board of pharmacy for the Territory of New Mexico, one of whom shall hold the office for five years; one for four years; one for three years; one for two years; one for one year in the first instance, and thereafter the governor shall annually appoint one person to serve as a member of the board for five years. The persons so appointed shall constitute the board of pharmacy, and shall hold the office for the term for which they were appointed, or until their successors are duly appointed and qualified. They, the said board, and each of them, shall, within ten days after their appointment, or being apprised of the same, take and subscribe the usual official oath before a properly qualified officer of the county in which they reside. The said board shall organize within thirty days from and after their appointment and annually thereafter by the election of a president and secretary. A majority of the board shall constitute a quorum for the transaction of business. Said board shall have the power to make by-laws and all necessary regulations for the proper fulfillment of their duties under this act without expense to the Territory. Any vacancy occurring in said board shall be filled by an appointment by the governor for the unexpired term.

SEC. 3720. The board of pharmacy shall register in a suitable book, a duplicate of which shall be kept in the office of the secretary of the Territory, the names and places of residence of all persons to whom they issue certificates and the dates thereof. It shall be the duty of said board of pharmacy to register, without examination, as registered pharmacists, all druggists and pharmacists who are engaged in business in the Territory of New Mexico at the passage of this act, as owners, principals, or clerks of stores for retailing, compounding, or dispensing drugs, medicines, or chemicals for medical use, or for compounding and dispensing physicians' prescriptions: *Provided*, No druggist's clerk shall be so registered unless he be eighteen years of age and has been engaged in some store or pharmacy where physicians' prescriptions were compounded and dispensed, for the space of three years next preceding the passage of this act. In case of the failure or neglect of any person to apply for registration within sixty days after the organization of the said board of pharmacy, he shall have forfeited the privilege of registering without examination, and shall only be registered after examination as set forth in section three thousand seven hundred and twenty-one.

SEC. 3721. That the said board of pharmacy shall upon application, and at such time and place and in such manner as they may determine, examine each and every person who shall desire to conduct the business of selling at retail, compounding and dispensing drugs, medicines, or chemicals for medical use, or compounding or dispensing physicians' prescriptions as pharmacists in the Territory of New Mexico, and if a majority of said board shall be satisfied that said person is competent and fully qualified to conduct said business of compounding or dispensing drugs, medicines, or chemicals for medical use, or to compound and dispense physicians' prescriptions, they shall enter the name of such person, as a registered pharmacist, in the book provided for in section three thousand seven hundred and twenty: *Provided*, That all graduates in pharmacy having a diploma from an incorporated college or school of pharmacy that requires a practical experience in pharmacy of not less than three years before granting a diploma may, in the discretion of the board, be entitled to have their names registered as registered pharmacists by said board without examination. The board of pharmacy shall issue an appropriate certificate to each person registered, which certificate must be conspicuously displayed in every store or place described in this section. Said certificate must be renewed twelve months after each date of issue.

SEC. 3722. The board of pharmacy shall be entitled to demand and receive from each person whom they register and furnish a certificate as a registered pharmacist, without examination, the sum of two dollars, and for each and every person whom they examine the sum of five dollars, which shall be in full for all services. In case the examination of said person shall prove defective and unsatisfactory to the board and he be declined registration, he shall be permitted to present himself for reexamination within twelve months thereafter and no charge shall be made for such examination.

SEC. 3723. The board of pharmacy shall hold semiannual sessions at such times and places as the board may determine; other sessions of the board may also be held whenever and wherever a quorum of the board is present.

In the interim of the sessions of the board and upon satisfactory evidence of a fitness of an applicant, any one member of the board may, in his discretion, issue a temporary certificate, which shall authorize and empower the holder to conduct a drug store or pharmacy as set forth in section three thousand seven hundred and twenty-one. Such temporary certificate must be signed by one member, and shall expire and terminate at the date of the next succeeding semiannual session of the board after the granting thereof. No fee shall be demanded for the temporary certificate.

SEC. 3724. Every owner of a drug store in the Territory of New Mexico shall be held responsible for the quality of all drugs, chemicals, and medicines he may sell or dispense, with the exceptions of those sold in the original packages of the manufacturer or wholesale dealer, and also those known as proprietary medicines. And should he knowingly, intentionally, and fraudulently adulterate or cause to be adulterated such drugs, chemicals, or medical preparations, he shall be deemed guilty of misdemeanor, and upon conviction thereof his license as a registered pharmacist shall be thereby revoked, and in addition thereto be liable to a penalty not exceeding five hundred dollars.

SEC. 3725. Any person who shall procure or attempt to procure registration for himself or for another, under the act, by making or causing to be made false representations, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be liable to a penalty of not less than five and not exceeding one hundred dollars, and his name, together with the name of the person so registered, shall be stricken from the register.

SEC. 3726. Any person not a registered pharmacist as provided in this act who shall conduct a store, or a pharmacy, or place for retailing, compounding, or dispensing drugs, medicines, or chemicals for medical use, or for compounding or dispensing physicians' prescriptions in the Territory of New Mexico, or who shall take, use, or exhibit the title of registered pharmacist, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, be liable to a penalty of not less than five nor more than one hundred dollars: *Provided further*, This act shall not apply to physicians putting up their own prescriptions, nor to the sale of patent proprietary medicines, nor to the sale of those articles commonly known as grocers' drugs, except those articles that are denominated poisons under the law known as the New Mexico poison law; nor to any regularly licensed physician of the Territory of New Mexico engaged in the drug business in towns or cities situated twenty miles or more from a regular licensed pharmacist engaged in the drug business.

SEC. 3727. If any registered pharmacist shall go out of the drug business, and remain out for a period of twelve months, his certificate as registered pharmacist shall thereupon expire.

SEC. 3728. All suits for recovery of the several penalties prescribed in this act shall be prosecuted in the name of the Territory of New Mexico, in any court having jurisdiction, and it shall be the duty of the prosecuting attorney of the county where such offense is committed to prosecute all persons violating the provisions of this act upon proper complaint being made. All penalties collected under the provisions of this act shall inure to the expense fund of the board which may occur.

SEC. 3729. It shall be the duty of the said board to grant to persons or merchants in towns or camps having no drug store, minor certificates without charge, as they may deem proper, to vend such medicines, compounds, or chemicals as are required by the general public: *Provided*, That this law is not to be so construed as to prevent ranchmen or miners not within reach of a store or place where drugs are sold from dispensing medicines to their families or employés: *Provided further*, That it shall be the duty of the secretary of said board to render an accurate annual statement to the governor of the Territory of all moneys received and expended by said board during each year, and he shall also report upon the general condition of pharmacy throughout the Territory.

SEC. 3730. The meetings of the pharmacy board shall be opened to registered pharmacists who shall be permitted to be present at the examination of applicants for registration.

SEC. 3731. Any member of the board of pharmacy who shall violate any of the provisions of this act, or who shall neglect or refuse to report any of the violations of the provisions of this act that may be within his knowledge, within ten days of the time said violation comes to his knowledge, shall be removed from office by the governor upon such showing as may be deemed satisfactory by the executive, and such vacancies shall be filled by the governor as now provided by law.

POISON LAW.

SEC. 1259. Every apothecary, druggist, or other person who shall sell and deliver any arsenic, corrosive sublimate, prussic acid, or any other violent poison, without having the word "poison," and the true name written thereof, written or printed in

Spanish and English, upon a label put upon the vial, box, or package that contains the same, shall be punished by a fine not exceeding one hundred dollars.

SEC. 1260. That hereafter it shall be unlawful for any person not a registered pharmacist to sell or dispense any poisons enumerated in Schedules A and B, except as approved by section fourteen of New Mexico pharmacy law, approved February 15, 1899. (Section 3726, Compiled Laws of 1897, quoted hereinbefore in pharmacy law.)

Schedule A.—Arsenic, mercury, strychnia, and their preparations of salts, acetate of lead, tartar emetic, cyanide of potassium, hydrocyanic acid, and all other poisonous vegetable alkaloids and their salts, essential oil of bitter almonds, opium and its preparations, except paregoric and such other preparations of opium containing less than two grains to the ounce.

Schedule B.—Aconite, belladonna, coca, colchicum, conium, nux vomica, henbane, savin, ergot, cotton root, cantharides, creosote, digitalis and their pharmaceutical preparations and alkaloids, croton oil, chloroform, chloral hydrate, sulphate of zinc, mineral acids, carbolic acid, and oxalic acid, without distinctly labeling the box, vessel, or paper in which the said poison is contained with the name of the article, the word "poison," and the name and place of business of the seller; nor shall it be lawful for any person to sell or deliver any poison enumerated in Schedules A and B unless, upon due inquiry, it be found that the purchaser is aware of its poisonous character, and represents that it shall be used for a legitimate purpose; nor shall it be lawful for any registered pharmacists to sell or dispense any poisons enumerated in Schedules A and B without, before delivering the same to the purchaser, causing an entry to be made in a book kept for that purpose, stating the date of sale, the name and address of the purchaser, the name of the poison sold, the purpose for which it is represented by the purchaser to be required, and the name of the dispenser; such book to be always open for inspection by the proper authorities, and to be preserved for at least four years. The provisions of this act shall not apply to the dispensing of poisons in not unusual quantities or doses, upon the prescriptions of practitioners of medicine: *Provided*, Nothing in this act shall be so construed as to prevent the sale of such poisonous articles as are directly used in mining or for the reduction or concentration of ores.

SEC. 1261. Any person violating the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in a sum not exceeding one hundred dollars, or by imprisonment in the county jail for not more than six months, or both, in the discretion of the court.

SEC. 1262. All fines recovered under the provisions of this act shall be paid to the treasurer of the Territorial board of pharmacy.

SEC. 1263. It shall be unlawful for any person to keep or maintain a place for the purpose of furnishing opium to others, or what is commonly known as a hop joint or opium joint: *Provided, however*, That the provisions of this section shall not in any wise apply to druggists who may dispense or sell the same upon the prescription of a physician.

SEC. 1264. Any person violating the provisions of the preceding section shall be deemed guilty of a misdemeanor, and upon conviction thereof before a justice of the peace, or the district court, or any competent tribunal, shall be fined in any sum not less than twenty-five dollars nor more than two hundred and fifty dollars, or he shall be sentenced to imprisonment at hard labor in the county jail for a term of not less than one nor more than six months, or both said fine and imprisonment, in the discretion of the court or jury trying the case.

SEC. 1265. All fines imposed under the provisions of this act, one half shall go to the prosecuting witness and the other half to the treasurer for the benefit of the school district wherein the offense was committed.

NEW MEXICO BOARD OF DENTAL EXAMINERS.

SANTA FE, N. MEX., *September 10, 1900.*

SIR: In accordance with chapter 60, section 10, general laws of New Mexico for 1893, we have the honor to submit the sixth annual report of the New Mexico board of dental examiners.

A special meeting of the board was held at Santa Fe on May 10, 1899, for the purpose of closing up the business of the board appointed by Governor Thornton on February 21, 1895.

There were present F. E. Olney, L. H. Chamberlin, and D. W. Manley. Drs. White and Bearup were unable to attend.

There were 13 applicants for permanent certificates, all graduates of recognized dental colleges. Of this number 9 were granted permanent certificates; 4 were refused certificates on account of removal from the Territory before the meeting of the board.

In regard to those applicants refused certificates it was—

"*Resolved*, That all applicants who have secured a temporary certificate and removed from the Territory before the meeting of the board and the issuance of a permanent certificate be granted a certificate upon their return without further cost."

The accounts of the treasurer were examined, found correct, and approved.

No violation of the law was reported during the year.

Since the law went into effect in 1893, 63 permanent certificates have been granted, 47 temporary certificates, and 5 examinations have been given, 3 passing successfully and 2 failing.

RECEIPTS.

Received from 13 applications for registration	$65.00
Cash with treasurer	58.25
	123.25

EXPENDITURES.

L. H. Chamberlin, traveling expenses	20.00
F. E. Olney, traveling expenses	20.00
W. H. White, traveling expenses	20.00
A. A. Bearup, traveling expenses	20.00
D. W. Manley, traveling expenses	20.00
Typewriting	1.00
Cash with treasurer	22.25
	123.25

There being no further business, and the term of office of the present board having expired and its successor duly appointed, the board adjourned sine die.

The members of the new board, appointed by Governor Otero in 1899, after qualifying before the secretary of the Territory, met and organized by electing L. H. Chamberlin president and D. W. Manley secretary; B. M. Williams, W. H. White, A. A. Bearup, members.

There being no other business, adjourned to meet at the call of the president. The annual meeting for 1900 has not yet been called.

D. W. Manley, *Secretary*.

Hon. M. A. Otero, *Governor of New Mexico.*

CLIMATE AND CROP REPORT.

Santa Fe, *August 9, 1900.*

Sir: I have the honor to forward, herewith inclosed, my report of the New Mexico climate and crop section for the fiscal year ending June 30, 1900.

Very respectfully,

R. M. Hardinge, *Section Director.*

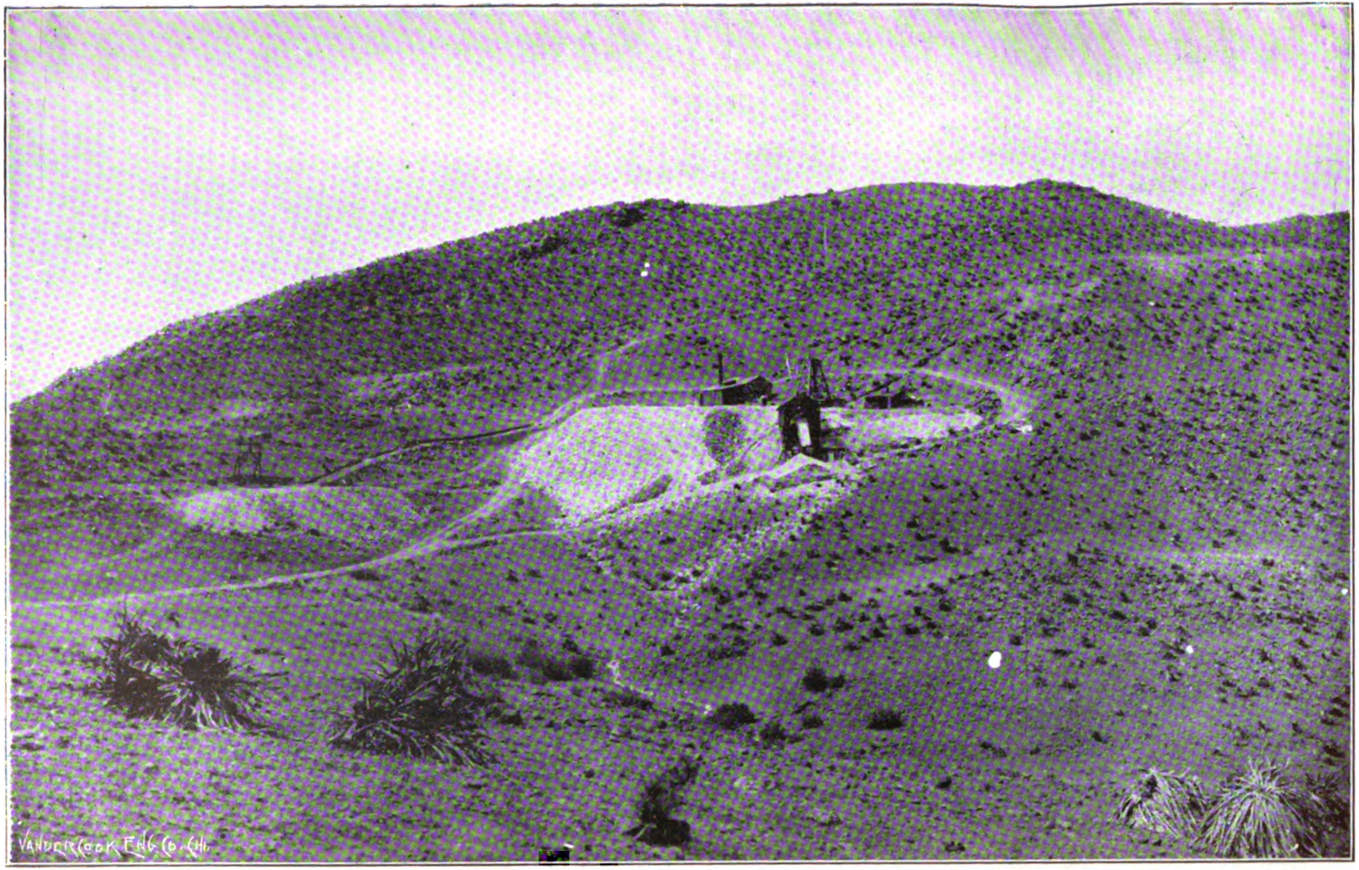
The Governor of New Mexico,
Capitol, Santa Fe, N. Mex.

REPORT OF THE NEW MEXICO SECTION OF THE CLIMATE AND CROP SERVICE OF THE WEATHER BUREAU, UNITED STATES DEPARTMENT OF AGRICULTURE (COOPERATING WITH THE NEW MEXICO WEATHER SERVICE), FOR FISCAL YEAR ENDING JUNE 30, 1900.

[R. M. Harding, section director, Santa Fe, N. Mex.]

The scheme of organization of the section has not been changed during the year. The annual Territorial appropriation of $700, passed by the assembly of February, 1899, for necessary printing in connection with the distribution of the several reports of the section, covers such expenses up to and including December, 1900. All other expenses, as equipment of stations, stationery, salaries, etc., are borne by the national service.

During the year 9 stations have been established, including reports from 2 stations of the Southern Pacific Railway, and 4 have been discontinued. At the close of the year 43 stations were reporting. Nine stations have been equipped with standard instrument shelters, making 24 stations of the section thus equipped. The vast territory of western Socorro County is now represented in the publications of the section by reports from Horse Springs, and full reports are being received from the medical



GOLD MINE, SIERRA COUNTY.

officers in command at the Government sanitariums at Fort Bayard and Fort Stanton. The Hon. Antonio Joseph, Ojo Caliente, has been furnished with a full station equipment, but at the end of the year Taos County is still unrepresented by reports. The summer resort of Cloudcroft, in the Sacramento Mountains, also has been equipped with instruments and a shelter, but as yet reports from this station have not begun.

There have been printed and distributed during the year 400 bulletins of information concerning the amount of snow on the ground in the vicinity of head waters of streams, 10,000 weekly climate and crop bulletins, 6,000 monthly reports of observations, and 800 annual summaries of yearly observations. The snow-fall and climate and crop bulletins are widely copied in the press of the Territory, and frequently by outside papers. It is estimated that the information given in the bulletins is by means of the Territorial press made to reach 20,000 readers weekly. Of the bulletins proper the majority of the copies printed are distributed outside of the Territory. The monthly reports and annual summary of the section are neatly printed quarto pamphlets coordinating the daily observations of the several stations and containing pertinent climatological discussions, and are distributed to applicants in all sections of the country.

The beneficent influence of our climate upon certain diseases is attracting increased attention, through the indorsement of leading physicians and the recognition given it by the Government in the establishment of army and navy sanitariums at Fort Bayard and Fort Stanton. It is gratifying to note the largely increased number of applications to the central office for climatic data from scientists, tourists, health seekers, and prospective settlers.

CROP REVIEW, SEASON OF 1899.

General weather conditions.—The crop season of 1899 was somewhat of a failure in many respects, owing to the late frosts which killed much of the fruit; the high, drying winds, and cool nights of the spring, which reduced the yield of lambs; and to the lack of good rains from the first part of April to the last half of June and during the month of August. The prevalence of high, dry winds and absence of warm rains in the spring delayed planting and prevented planted seeds from germinating. In central and northern sections many fields of wheat, corn, and oats which should have been planted early in May were not seeded until after the warm showers of the latter part of June. The unusually heavy snows in the mountains during the winter promised a full volume of water in rivers and streams for spring irrigation—and, indeed, precautions were taken along the lower Rio Grande for unusual freshets—but the continued and extremely dry winds of March, April, and May rapidly evaporated the deep snow in the mountains and caused streams to carry considerably less than their usual volume. This fact, combined with the absence of spring rains, threatened a scarcity of irrigation water early in the season, especially in the central and southern Rio Grande Valley. Before the June rains came many ditches in both these and other sections were without water. Stock came through the winter in fair condition and began a rapid improvement on the good grazing started by the rains and snows of the last week of March and the first week of April, but as the season advanced the grass dried up under the influence of the desiccating winds, and stock had to be driven long distances to water. By the middle of June food and water for stock were so scarce that stockmen were considerably alarmed at the prospect. The warm showers of the latter part of June and the good, soaking rains during July reversed the unfavorable condition which had obtained up to this time, and by the end of July crops in general had so far improved as to promise a very satisfactory termination of the season that had started so unfavorably. August, however, proved a hot, dry month, with unusually high, dry winds during the last half, conditions which offset in a large degree the favorable weather of July. At the beginning of the month water for irrigation purposes was sufficient, but toward the close the volume of rivers and streams had greatly lessened and many ditches of central and eastern sections were dry. Outside water holes again ran dry and, as the grass was fast drying up, there was threatened a scarcity of fall and winter food for stock on the ranges. The dry weather also favored the increase of injurious insects in gardens; in the southwest some fields of beans were entirely destroyed. September was decidedly more favorable to all interests, having a temperature slightly above normal and bringing good, soaking rains over the greater part of the Territory, and especially to northern counties, where late crops were still in a condition to receive benefit from favorable weather. The rains which came during the first half of the month were of benefit to late crops, as late alfalfa and hay, beans, and other garden truck, and were of immense value to stock interests in filling outside water holes and practically assuring good fall and winter grazing on the ranges.

Progress of crops.—March was very dry until the last week, when several good rains and snows put the soil in good condition for working and started vegetation. Frost was out of the ground as far north as Santa Fe by the 15th; in southern counties irrigation ditches were opened by the 20th. Much of the spring wheat and some oats were sown during the last decade. By the last of the month early fruits, as peaches, plums, and apricots, were in bloom in southern valleys, but were greatly damaged by a frost on the 27th–28th. Toward the end of the month it became apparent that central vineyards had been greatly injured by the severe freeze of March 17. Snow lay from 5 to 10 feet deep on the northern mountains at the close of the month, which was thought at the time to insure sufficient water for the streams for some months.

The cool nights and high, dry winds of the latter part of April checked the growth of vegetation, and the frequent frosts of the month, especially on the 6th, 7th, and 30th, further lessened the fruit prospects of central and southern districts, apricots, peaches, and grapes suffering most. Northern orchards, being later in developing, escaped the frosts with comparatively slight injury, but it afterwards became apparent that many of the peach trees of the San Juan country had been winterkilled. In southern sections alfalfa had a good start early in the month, and gardening, sowing oats and spring wheat, and new alfalfa fields, were nearing completion by the 15th; and by the close of the month some alfalfa was in flower and most of the corn had been planted. In northern counties much of the corn had been planted by the end of the month, gardens made, and oats and wheat sown. Streams carried less than their usual volume, but were still sufficient. On account of the cool nights and lack of rains the lambing season began under adverse conditions and range stock made slow improvement.

The weather continued dry and windy during May, with cool nights and killing frosts in localities on the 3d, 17th, 20th, and 22d. Some claimed that it was the driest and coolest May on record. Excepting in the extreme southern valleys, fruits, gardens, alfalfa, and young corn sustained great injury from the frosts. The precipitation occurred as light showers—generally on the 8th—over northern and northeastern sections, but over the greater part of the Territory there was a total absence of rainfall. Crop growth was behindhand at the beginning of the month, and the unfavorable conditions tended still further to make a backward season. Toward the close of the month the conditions were quite serious for stockmen, as outside watering places generally were without water, and grass on the ranges was short and dried up. Spring seeding was carried on under rather favorable conditions during the first part, but as the month advanced much of the planting and seeding was suspended, awaiting more favorable weather. In southern sections the first cutting of alfalfa was done about the 15th. During the last decade several thousand acres of sugar beets were planted in the lower Pecos Valley. Owing to the cool nights and lack of rains the lambing season was estimated to be only about 50 per cent of the average yield. Stock improved so slowly that the outlook was very discouraging. Irrigation water became very scarce in all sections toward the close of the month, excepting the lower Pecos Valley and the San Juan country.

The first half of June was dry and windy, but the last half warm and showery. A frost on the 2d slightly nipped some transplanted tomato and cabbage plants in the southwestern valleys. Excepting in central sections, conditions began to improve rapidly after the 15th. Planting, which had been suspended in early May, was finished during the latter part of this month The first cutting of alfalfa was generally secured by the 10th in southern sections, but owing to the lack of rain the yield was far below the average. The second crop, however, made a much better showing. Corn planting generally was finished by the 10th, excepting in central sections, where the absence of moisture rendered it impracticable to put in crops. Stock interests suffered greatly during the month, and it was not until the last week that conditions began to improve and grass on the ranges to grow. By the 25th peaches were in the markets of the lower Pecos Valley, and peaches and plums were getting ripe in the lower Rio Grande Valley.

The "rainy season" set in about the 7th of July, and the rapid improvement thereafter in crops promised compensation in a great measure for the disastrous drought of the earlier part of the season. Irrigation ditches were again running full. Grass on the ranges began a luxuriant growth, and by the close of the month stock had improved wonderfully and generally were in excellent condition. As a rule the rains were steady and soaking, but there were several so-called "cloudbursts," which caused considerable local damage to crops and railway property. Harvesting wheat and the second growth of alfalfa were well begun in central localities by the 4th, but owing to the delays caused by the rains these harvests were not finished until the latter part of the month, and both crops sustained some loss. Corn grew rapidly, and during July promised to make up for its previous backward growth. Fruits ripened under more favorable conditions, and, although of a small yield, were generally of a good quality, excepting that the apples were unusually wormy in many orchards. Southern melons came into the markets during the last decade.

With the exception of the extreme northwestern counties, August proved a very warm and dry month, with unusually high dry winds. A frost on the 20th slightly nipped some melon and pumpkin vines in northern sections. On the 3d a severe hailstorm in San Juan County caused some local damage to gardens. Harvesting wheat, barley, oats, and the second and third growths of alfalfa was well under way in central and northern sections by the 20th, and the crops were secured under favorable conditions. The third cutting of alfalfa was, as a rule, not as good as the second. In the north, and in the better watered valleys, corn continued a fair growth, but owing to the continued drought many fields in central sections, and on unirrigated lands, ripened prematurely, and promised to be fit for nothing but fodder. The sugar beets of the lower Pecos Valley generally were "laid by" by the 20th. Northern melons of a very good quality came into the markets during the last decade. Peaches and plums of San Juan and Rio Arriba counties were marketed by the 25th; peaches were scarce but of good quality, while plums were both excellent and abundant. The vineyards of Bernalillo County had recovered beyond expectation from the killing frost of March 17, and grapes, although a small yield, were maturing nicely.

The rains of September were divided into two distinct periods, from the 7th to 10th, and from the 13th to the 16th, inclusive. The thunderstorms of the 13th, 15th, and 16th, over northern sections, were accompanied generally by hail, which in some localities proved injurious to fruit trees, crops, and other property. At Fort Union after the storm of the 16th hailstones lay 6 inches deep on the ground. The quality of late fruits was somewhat improved by these good rains. The first general heavy frost of the fall occurred on the 17th, which capped northern mountains with snow and caused some slight damage to late melon and squash vines in northern gardens. Harvesting late wheat and oats was well under way by the middle of the month in northern sections, but the rains caused some delay and some slight damage.

On account of protracted droughts and early and severe frosts, field crops yielded very irregularly. In well-irrigated sections, and generally in northern counties where rains were more frequent and abundant, cereals grew fairly well, but crops as a whole yielded considerably under the average. With the possible exception of alfalfa, corn seemed to stand the long droughts better than other crops, but on unirrigated lands of southern and central sections many of the fields were almost total failures. The second and third cuttings of alfalfa and late garden truck, as beans, melons, squashes, cucumbers, etc., were, as a rule, the most successful crops of the season. With the exception of a few districts in the northern valleys, crops were beyond danger from ordinary weather conditions by the last of September. The first general killing frost occurred over northern and central sections on the 16th of October. Although water was rather scarce on the ranges, grass had cured excellently, and all reports indicated that stock was in prime condition to meet the coming winter.

Annual summary of meteorological data, Santa Fe, N. Mex., 1899.

	Pressure.			Moisture.[1]				Average daily cloudiness, 0 to 10.	Wind.				Percentage of sunshine.
	Monthly mean.	Extremes.		Dew point.		Relative humidity.			Average hourly velocity.	Maximum velocity.	Direction at time of maximum velocity.	Prevailing direction.	
		Maximum.	Minimum.	6 a. m.	6 p. m.	6 a. m.	6 p. m.						
January	23.18	23.39	22.92	11	10	68	42	2.3	7.1	36	N.	NE.	80
February	23.08	23.43	22.65	13	10	71	40	3.1	7.5	36	SW.	NE.	79
March	23.11	23.37	22.78	14	4	50	20	2.8	8.0	32	NW.	NW.	79
April	23.20	23.47	22.94	14	2	40	15	2.5	8.1	43	SW.	SW.	83
May	23.19	23.34	22.85	6	2	20	10	2.8	8.5	42	SW.	SW.	85
June	23.31	33.60	22.99	32	22	45	20	3.0	7.3	34	SW.	SE.	85
July	23.37	23.50	23.25	48	49	68	50	4.9	5.5	27	E.	SE.	69
August	23.34	23.45	23.23	38	39	49	31	2.9	5.6	32	S.	SW.	82
September	23.40	23.59	23.18	35	30	54	29	2.6	5.5	25	SE.	SE.	84
October	23.28	23.54	22.97	26	20	54	30	3.0	6.9	37	SW.	SE.	80
November	23.27	23.50	22.88	18	17	52	36	2.6	5.7	35	SW.	NE.	83
December	23.25	23.57	22.94	10	9	53	37	3.4	6.2	29	NW.	NE.	77
Year	23.25	23.60	22.65	22	18	52	30	3.0	6.8	43	SW.	SE.	80

[1] Mountain time.

Climatological data for the year 1899.

Stations.	Counties.	Elevation, feet.	Temperature, in degrees Fahrenheit.						Precipitation in inches.									Sky.			Prevailing direction of wind.
			Length of record years.	Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record years.	Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall.	No. rainy days.		No. clear days.	No. partly cloudy days.	No. cloudy days.	
Albert	Union	4,700	8	57.2	101	[1]June 19	— 5	Feb. 7	9	12.76	5.66	July	0	April	5.5	87		237	86	42	
Albuquerque	Bernalillo	5,200	20	55.5	104	July 22	1	Feb. 12	17	(7.45)	3.23	July	0	May	11.4						S.
Alma	Socorro	5,500	6	55.1	101	Sept. 2	5	Feb. 6	6	12.91	5.24	July	T.	May	T.	59					SW.
Aztec	San Juan	5,590	5	49.4	95	July 1	—23	Feb. 7	5	9.77	3.30	Aug	0.05	May	24.7	50		139	59	67	W.
Bernalillo	Bernalillo	5,260	3	55.8	97	[1]June 11	1	Feb. 12	5	6.89	3.21	July	0	[1]May	5.0	33					SE.
Bluewater	Valencia	6,200	3	48.4	100	June 19	— 8	Feb. 7	3	9.90	4.45	July	T.	[1]April	20.5	37		175	24	166	W.
Clayton	Union	5,178	3	(51.7)	95	June 20	—18	Feb. 11	2		10.51	July	0	[1]April							SW.
Deming	Grant								13	5.74	3.92	July	0	[1]April	T.	19					W.
East Las Vegas	San Miguel	6,450	11	51.0	94	June 20	—22	Feb. 7	8	15.86	7.09	July	T.	Jan	18.8	49		241	97	27	SW.
Eddy (Carlsbad)	Eddy	3,122	3		109	Aug. 12	1	Feb. 12	4		2.10	Nov	0	Jan	8.0						W.
Engle	Sierra	4,750	5	56.2	97	Sept. 1	— 5	Feb. 6	5	7.72	3.67	July	0	[1]April	7.3	21					SW.
Espanola	Santa Fe	5,590	4	51.2	97	Aug. 27	— 5	Feb. 12	4	6.25	1.66	July	0	[1]May	1.5	81		283	69	13	S.
Folsom	Union		2	48.5	95	June 19	—21	Feb. 6	2	20.05	5.34	July	0.24	April	45.0	53		199	144	22	SW.
Fort Bayard	Grant	6,040	25	54.8	100	Sept. 8	5	Feb. 7	23	10.78	4.66	July	T.	[1]May	5.0	48					W.
Fort Union	Mora	6,750	38	49.7	92	[1]Aug. 11	—17	Feb. 11	34	13.69	3.98	July	T.	[1]May	17.0	43		265	72	28	SW.
Fort Wingate	Bernalillo	6,649	32	50.4	94	June 19	1	an. 15	29	10.92	3.25	July	0.07	March	39.6	43					W.
Galisteo	Santa Fe	6,074	6	(52.4)	100	[1]Aug. 1	1	Feb. 8	6	(11.59)	4.64	July	0	[1]May	10.5						W.
Gallinas Spring	San Miguel	5,272	14	54.3	102	June 20	—20	Feb. 7	15	18.87	6.16	July	0.01	May	14.0	50					W.
Gila	Grant	4,040	5	59.0	102	Sept. 2	7	Feb. 7	5	12.60	5.15	July	T.	May	8.5	54		256	81	28	SW.
Hillsboro	Sierra	5,100	5	57.3	99	June 24	3	Feb. 6	7	4.60	2.22	July	0	[1]Jan	6.0						W.
Las Vegas Hot Springs	San Miguel	6,767	1	50.7	92	[1]June 18	—19	Feb. 7								69		288	53	24	SW.
Lordsburg	Grant								14	5.73	2.62	July	0	[1]May	0.8						W.
Los Lunas	Valencia	4,900	5		97	[1]June 16	0	Feb. 7	5		2.75	July	0	[1]May	2.0						
Lower Penasco	Chaves	5,250	4	(55.9)	96	June 19	— 9	Feb. 7	4	16.09	5.89	July	0	May	13.5	49					W.
Mesilla Park	Doña Ana	3,500	9		101	[1]July 4	2	Feb. 7	11	9.67	4.54	July	T.	May	1.9	47		220	94	51	SW.
Monero	Rio Arriba	7,356	7		95	July 1	—26	Feb. 7	5		2.97	July	0.11	April							W.
Ojo	San Juan	4,800	2				— 4	Feb. 6													W.
Puerto de Luna	Guadalupe	5,350	1		103	June 20	— 9	Feb. 7													W.
Raton	Colfax	6,622	5	49.9	95	June 19	—16	Feb. 11	5	16.66	7.47	July	T.	Jan	18.1	48					S.
Rincon	Doña Ana	4,030	4		102	Sept. 2	7	Feb. 6	8		1.54	Aug	0	[1]May							W.
Roswell	Chaves	3,570	5	58.8	103	Aug. 12	— 6	Feb. 7	5	16.56	4.37	July	0.06	[1]Jan	5.0	34		216	92	57	SW.
San Marcial	Socorro	4,554	3	57.9	98	[1]July 8	5	Feb. 12	8	6.78	2.34	Aug	0	Jan	2.5	28		181	162	19	S.
Santa Fe	Santa Fe	6,998	26	49.0	87	Aug. 27	— 5	Feb. 7	26	10.05	4.71	July	0.01	May	14.0	81		234	99	82	SE.

Shattucks	Eddy	6,000	3	56.1	98	[1] June 7	— 8	Feb. 11	3	22.96	6.82	July	T.	May	22.5	...	...	...	...	SW.
Socorro	Socorro	4,600	6	55.7	100	[1] June 19	8	Feb. 12	5	7.71	8.18	July	0	Feb.	4.2	37	189	121	55	N.
Springer	Colfax	5,857	1	...	...	...	—26	Feb. 7	...	...	...	...	...	...	...	...	...	...	...	...
White Oaks	Lincoln	6,470	3	52.9	92	July 4	—12	Feb. 7	3	14.86	5.53	July	0	May	83.5	43	269	44	52	W.
Winsors	San Miguel	8,000	2	41.1	86	Aug. 28	—27	Feb. 7	4	19.05	5.19	July	0.15	[1] April	...	68	185	67	113	W.
Cambray	Doña Ana	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	W.
Bell Ranch	San Miguel	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	SW.
Gage	Grant	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	W.
Strauss	Doña A	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	E.

[1] Occurred also other dates or month.

NOTE.—Numbers inclosed in parenthesis ( ) are interpolated values. T., trace of precipitation.

Voluntary observers.

Station.	Observer.	Station.	Observer.
Albert	A. Knell.	Gila	Chas. H. Lyons.
Albuquerque	Prof. M. Custers.	Hillsboro	G. I. Given, M. D.
Alma	Wm. French.	La Luz	Mrs. H. T. Findley.
Aztec	C. E. Mead.	Las Vegas Hotsprings.	Wm. C. Bailey, M. D.
Bell Ranch	C. M. O'Donel.	Lordsburg	Agent Southern Pacific R. R. Co.
Bernalillo	Brother Gabriel.		
Bluewater	J. S. Van Doren.	Los Lunas	Richard Pohl.
Buckmans	H. S. Buckman.	Lower Peñasco	J. F. Hinkle.
Cambray	Agent Southern Pacific R. R. Co.	Mesilla Park	New Mexico Agricultural College.
Clayton[1]	G. W. Guyer.	Monero	Mrs. C. D. Caldwell.
Deming	Agent Southern Pacific R. R. Co.	Olio	Cyril James Collyer.
		Puerto de Luna	P. R. Page.
East Las Vegas	Inez D. Rice.	Raton[2]	Wm. M. Oliver.
Eddy (Carlsbad)	Prof. E. M. Skeats.	Rincon	A. J. Coats.
Engle	E. J. Westervelt.	Roswell	W. M. Reed.
Española	Jim Curry.	San Marcial	J. W. McCoach.
Folsom	Jackson Tabor.	Santa Fe	U. S. Weather Bureau.
Fort Bayard	Post surgeon.	Shattucks	J. S. Shattuck.
Fort Union	M. C. Needham.	Socorro	Prof. F. A. Jones.
Fort Wingate	Post surgeon.	Springer	Dr. L. Hines.
Gage	Agent Southern Pacific R. R. Co.	Strauss	Agent Southern Pacific R. R. Co.
Galisteo	Sylvester Davis.	White Oaks	Urbain Ozanne.
Gallinas Spring	Jas. E. Whitmore.	Winsors	H. D. Winsor.

[1] Clayton—Dr. J. C. Slack, from February 24.

[2] Raton—F. D. Kilmer, from February.

Forecast display stations.

[Distributing center, Santa Fe.]

Station.	Display man.	Station.	Display man.
Albuquerque	Postmaster.	Raton	A. L. Hobbs.
Eddy	Pecos Valley and Northeastern Rwy,	Roswell	W. M. Reed.
		Silver City	Prof. A. E. Bennett.

Climate and crop correspondents.

Station.	Correspondent.	Station.	Correspondent.
Albert	A. Knell.	Las Cruces	New Mexico Agricultural College.
Albuquerque	Prof. M. Custers.		
Allison	Wm. Taylor.	Los Alamos	Wm. Frank.
Alma	Wm. French.	Los Lunas	Richard Pohl.
Aztec	Prof. C. E. Mead.	Lower Peñasco	J. F. Hinkle.
Bell Ranch	C. M. O'Donel.	Ojo Caliente	A. Joseph.
Bernalillo	Brother Gabriel.	Old Albuquerque	A. Montoya, jr.
Bluewater	J. S. Van Doren.	Olio	C. J. Collyer.
Buckmans	H. S. Buckman.	Puerto de Luna	P. R. Page.
Clayton	Dr. J. C. Slack.	Raton	F. D. Kilmer.
Cliff	T. J. Clark, jr.	Red Rock	Louis Champie.
East Las Vegas	J. Thornhill.	Richardson	Ed. McTigue.
Eddy	L. O. Fullen.	Rincon	A. J. Coats.
Elk	V. H. York.	Roswell	W. M. Reed.
Engle	E. J. Westervelt.	Santa Fe	A. Boyle.
Española	Jim Curry.	Shattucks	J. S. Shattuck.
Fort Union	M. C. Needham.	Socorro	Prof. F. A. Jones.
Fort Stanton	T. B. Coe.	Springer	Dr. L. Hines.
Fresnal	Allen Blacker.	Taos	Frank Staplin.
Galisteo	Sylvester Davis.	Tularosa	F. I. Otis.
Gallinas Spring	J. E. Whitmore.	Weber	E. H. Biernbaum.
Gila	Chas. H. Lyons.	White Oaks	Urbain Ozanne.
Hillsboro	F. I. Given, M. D.	Winsors	H. D. Winsor.
Hobart	W. H. Hough.		

Forecasts are bulletined at all stations along the Pecos Valley and Northeastern Railroad.

THE CLIMATE OF NEW MEXICO AND ITS EFFECT UPON TUBERCULOSIS.

[By Francis Crosson, M. D.]

Tuberculosis is the most widely spread and general disease afflicting mankind, and it is distributed over a larger portion of the earth's surface than any disease of which we have an absolute knowledge. No race of people, no portion of the habitable globe, can be said to be absolutely invulnerable against its invasions and destructive ravages. It is a disease so old that we have no reliable history extant telling us when and where it first appeared among the human race. Every age has brought forward its supposed panacea in an attempt to stay its mortal march. In spite, however, of everything that has thus far been devised or suggested for the prevention or cure of this alarmingly fatal malady, it may be said, in a general way, that we are still in the very infancy of our power to stay the onward progress of this arch enemy of mankind.

Since the announcement by Robert Koch, of Berlin, in 1882, of the specific causative factor of tuberculosis (the so-called bacillus of tuberculosis) practically nothing has been accomplished in either limiting or preventing the spread of this disease. Numberless remedies and alleged specifics have been heralded to the world from time to time; each has had its brief day of trial and failure, so that at the present moment it can be affirmed with great certainty that we stand practically as powerless to deal successfully, in a medical way at least, with tuberculosis as did the fathers of medicine centuries ago.

The treatment, prevention, and cure of tuberculosis have been more or less prominently subjects of discussion in both the newspaper press and periodical publications of the past few years. The public has been partially taken into the confidence of the medical profession. Educational and missionary literature has been freely disseminated by societies for the prevention of tuberculosis with the hope of familiarizing the reading public in some degree with the history, nature, and progress of a disease alarmingly fatal in its tendency when left unhindered to pursue its usual course. In spite, however, of these laudable efforts to educate individuals and create sentiment among public officials and legislators, the fact is quite patent to persons conversant with this subject that there is a very widespread misconception and misunderstanding concerning a disease which is alleged to be the cause of one-seventh of all the deaths occurring annually in the United States alone.

It has been stated by some writers that tuberculosis can be successfully treated in any climate. All experience, I believe, is against such a conclusion. It has been demonstrated beyond question that certain sections of the United States possess climatic characteristics which are peculiarly adaptable to the successful management of this disease. The so-called arid region of the great Southwest, which comprises portions of southern Colorado, all of New Mexico and Arizona, together with that part of western Texas known as "Llano Estacado," or "Staked Plains," may be included in this favored section. This vast and salubrious stretch of country, which is sometimes sneeringly alluded to as "a land of sand, sagebrush, and cacti," possesses in an almost illimitable degree those very elements which observation and experience have proven to be of the utmost value in the treatment of tuberculosis.

We are gradually getting away from the laboratory and drawing closer to nature for a solution to this problem. Where medicines have failed, the elements are succeeding. A pure atmosphere, containing an abundance of oxygen, ozone, and electricity, in conjunction with a large amount of sunshine, is to-day fulfilling in an eminently satisfactory manner the mission heretofore mapped out for such agents as cod liver oil, creosote, and the various poisonous concoctions known as serums.

The importance of climate as a factor in the treatment of pulmonary tuberculosis is daily manifesting more and more its value, whether taken separately or coupled with the various specific plans of therapy now advocated and employed in this important branch of practice. Physicians are informing themselves more widely upon this vital question, and the experiences gained by the practitioner living amidst such ideal climatic conditions as exist in New Mexico and other parts of the great Southwest are being looked upon with more interest and kindly consideration than has heretofore been accorded them.

The consensus of opinion as expressed by the leading authorities on tuberculosis at the International Congress held at Moscow, Russia, two years ago, was unanimously in favor of the climate treatment of pulmonary tuberculosis over all other methods considered.

The southwestern section of the United States is studded all over with tubercular patients, who came to this section many years ago—some of them as long ago as twenty-five years. They are to-day, and have been for many years, healthy citizens, have married and reared children who are to all appearances absolutely free from tubercular diseases.

Such a thing as infection with the tubercle bacillus, through the medium of the atmosphere, is absolutely unknown in New Mexico. I have taken great pains to investigate this subject. In an atmosphere where dead and discarded animal and vegetable substances undergo desiccation rather than decomposition explains in a manner the curative effect of climate upon pulmonary tuberculosis. The native people of New Mexico are singularly free from tuberculosis. I have had but three cases in a general practice among them covering a period of more than six years. In each of these instances I was able to trace the origin of the disease to a direct infection.

Animals, as well as the human race, are likewise remarkably free from tuberculosis in this region, as has been shown by the researches of Herrera and Lope in Mexico, where the climatic conditions are practically similar to those existing in New Mexico, Arizona, southern Colorado, and portions of western Texas.

These investigators report that they found 45 cases of tuberculosis in cattle out of 73,000 killed and examined at the Government abattoir in the City of Mexico.

It may be stated in a general way that all specific plans of therapeutic treatment thus far suggested for the cure of tuberculosis, and especially of the pulmonary form, have failed, so that we must look to nature rather than to the laboratory for our weapons to combat this enemy of the race.

In my experience the best possible treatment for incipient pulmonary tuberculosis is the nomadic life of the tent dweller carried out in a climate such as we have here in New Mexico, where the patient can live out of doors practically all the year around. I have had many patients recover under this plan of treatment.

The early diagnosis of pulmonary tuberculosis is of the utmost importance, for it is in the beginning of the disease that we must look for the greatest benefit in the largest proportion of cases from the climate or the out-of-door plan of treatment.

New Mexico is essentially a "land of sunshine and blue skies."

Here we have a dry and bracing climate with no extreme of heat and cold, a climate which, for the most part, admits of an existence out of doors almost all the year around. It is these qualities of air and sky that have caused this favored region to be known to-day over the entire civilized world as the "land of sunshine," and the peculiar adaptability of such a climate to the successful management of consumption and other diseases of the lungs and respiratory tract is causing invalids to flock here in great numbers, experience and observation having demonstrated beyond further question the fact that the seacoast resorts have proven dismal failures in exercising either a corrective or retarding influence upon the diseases mentioned above.

The past few years the medical profession, as well as the laity, have been made aware through various channels of the vastly superior climatic conditions existing throughout the Territory of New Mexico, and patients are seeking relief here by the hundreds where formerly we could estimate them only by the dozen.

I am not conversant with all of New Mexico's superior resources, but I am persuaded that chiefest among her items of wealth is her grand, glorious, life-giving climate.

In their pursuit of the germ of consumption investigators seem to be losing sight of the patient afflicted with this disease. Boards of health are suggesting all sorts of safeguards to limit the spread of consumption in the large and populous centers. Warfare against infected meat, milk, birds, and domestic animals is being waged with interminable energy in the hope of eradicating from the human race a disease that has baffled our best scientific minds for centuries.

So fierce and vindictive has this campaign become that at least one State—California—has threatened to establish and maintain a quarantine of exclusion against consumptive patients seeking residence or sojourn within the borders of that State. This is certainly carrying prophylaxis to an unreasonable extreme. To attempt to put into force such a drastic measure would surely raise serious questions concerning the rights of States as against those of individuals. Further than this, the adoption of such a silly piece of legislation would carry with it the implication that tuberculosis or consumption is a menace of the population in the same sense that smallpox, diphtheria, and scarlet fever are. This we know to be absurd. If tuberculosis is ever communicated from one person to another by direct contact, personal association, or even through the medium of the atmosphere, it is the very unusual exception and not the rule. To prove this statement we have merely to refer to the records of hospitals and sanitariums exclusively devoted to the treatment and care of persons afflicted with tuberculosis. I doubt if there can be found among these records a single well-authenticated case of the disease ever having been transmitted from the diseased to the healthy after years of daily personal contact. Instances are recorded occasionally where nurses and attendants have been directly inoculated or infected through cuts and abrasions on the hands while handling cuspidors and other receptacles while in the act of disposing of the infectious discharges from the diseased lungs. It is likewise true that various domestic animals and birds have tuberculosis, and in some instances they may be sources of danger to the human race. Many serious charges have been made against milk as a vehicle for conveying the germs of this disease into our bodies, but how many authenticated cases of the disease can be traced to such agents and sources?

Osler says "the requirements of a suitable climate are a pure atmosphere, an equable temperature not subject to rapid variations, and a maximum amount of sunshine." Given these factors and it makes little difference where a patient goes, so long as he lives an outdoor life. The purity of the atmosphere is the first consideration, and it is this requirement that is met so well in the mountains and the forests.

No medicinal agents have any special or peculiar action upon tubercular processes. The influences which they exert is upon the general health, increasing the physiological resistance and rendering the tissues less susceptible to invasion.

The problem of the prevention of the further spread of tuberculosis and its ultimate and complete eradication from the human race will be solved when physicians realize the importance of at once placing the patient suffering from, or threatened with, this disease in a suitable climate. Children inheriting that peculiar condition of the cellular structure and cell elements known as a tubercular tendency will develop, in a favorable climate, a cell antagonism to the disease which can never be acquired in a climate where tubercular diseases are more common and which favors the causes that lead to tubercular disease.

One of the most pathetic aspects of this disease is the fact that it has in the past and still continues to number among many of its victims many of the brightest and brainiest products of the human race. This fact seems doubly deplorable when it can be shown that many, if not all, of these useful lives could have been saved by a timely recourse to the climatic plan of treatment.

It is generally conceded by the most eminent writers upon bacteriology to-day that climatic conditions play a most conspicuous part in both development and retardation of microbe life. Epidemic diseases which have for their vehicles of distribution certain conditions of atmosphere, such as heat and moisture, constantly demonstrate their power for spreading contagion, the moisture contained in the air being the chief factor for preserving the vitality of the germ.

To any one familiar with the extreme differences existing along the Atlantic coast States and here in the Southwest, the great rôle played by the climate in each locality named will at once become strikingly apparent to the most indifferent observer. Epidemics such as "la grippe," so fatal and destructive in its train of sequelæ, are unknown in New Mexico. This is rather remarkable, in view of the fact that the bulk of the population (about three-fourths) are native peoples, who live in the most humble and primitive state, never employing any modern sanitary precautions to guard against epidemic invasions. After careful experiments and close observations for more than seven years, I am persuaded that the climatic conditions existing throughout the Territory of New Mexico, and here in the mountain regions more especially, the rarity and purity of the atmosphere, together with the almost constant direct rays of the sun, are the most powerful bactericides known to science to-day. In a climate where discarded animal and vegetable substances undergo prompt and rapid desiccation after brief exposure to the atmosphere without the least manifestation of decomposition argue most strongly against bacterial development. I have repeatedly made experiments with discarded sputa from tuberculous lungs and I find that the bacilli lose their infective power in a very short time after exposure to the sun's rays in this arid atmosphere. This, I think, clearly explains the curative effect of climate upon pulmonary tuberculosis. Constant inhalation of what may properly be termed an aseptic atmosphere in time brings about in the pulmonary tissues, inflamed by tuberculous deposits, that very desiccation effected upon animal and vegetable substances exposed directly to the air.

Here in New Mexico, where we constantly have a large colony of invalids, principally persons with tuberculosis, I have yet to meet with a single case of tuberculosis communicated from the diseased to the healthy through the medium of the atmosphere. That the native people of this section, both Mexican and Indian, experience such wonderful immunity against tuberculosis, especially of the respiratory tract, must have its explanation in the very favorable climatic conditions surrounding.

In order to derive all the possible benefit from such a climate as that of New Mexico, the health seeker should live out of doors. If he has the strength to get about at all, the best he can do is to go into the pine forests and camp out. The nomadic life of the tent dweller is the best treatment for incipient pulmonary tuberculosis. It is often a grave mistake for an invalid to seek change of climate in a place where he has no friends, no occupation—nothing to distract his mind from himself and his malady. In a few days he exhausts the possibilities of mere curious interest in unfamiliar surroundings, and then he strolls about alone, or with chance acquaintances, until he becomes weary of the town and the monotony of his existence. Homesickness ensues, the mental disease more than counterbalances the climatic benefit, and the health seeker in desperation returns to his home, preferring the certainty of death among friends to the possibility of a prolonged existence under insupportable conditions. If such a health seeker would procure a saddle horse, pack animals, and a camp outfit, and go into the mountains with a good guide and agreeable companions, he would find no monotony and no homesickness, but would gain strength and buoyancy of spirit, and never know a dull hour. A year of outdoor life in the dry, bracing air of New Mexico will, I believe, arrest any case of beginning pulmonary tuberculosis if the sufferer has the necessary strength and vitality to begin such a course of treatment and takes ordinary precautions against undue exposure and overexertion.

In a period of eight years I have observed not so much the contrast as the very striking results following the use of specific plans of therapy as compared with the influence of climate upon diseases of the respiratory system in general, but with more especial reference to pulmonary tuberculosis, and I must admit in the most candid terms that any alleged specific employed or indicated in this class of affections will have its efficacy overwhelmingly augmented if suitable climatic conditions have a proportionate consideration with the medical agencies employed.

Recognizing the superior climatic advantages of New Mexico for the treatment of diseases of the respiratory system, the United States Government has recently established, and has now in successful operation, two large sanitariums here, one operated under the auspices of the War and the other under the Navy Department, for the climatic treatment of soldiers and sailors afflicted with tuberculosis. Subjoined are letters appertaining to these institutions, which, I trust, may prove of interest.

OFFICE OF MEDICAL OFFICER IN COMMAND,
MARINE-HOSPITAL SERVICE,
Fort Stanton, N. Mex., January 29, 1900.

DEAR DOCTOR: I hardly know what to tell you or where to begin. In the first place, the sanitarium is where old Fort Stanton stood, and many of the buildings, which were of stone and adobe, are being repaired and modernized.

The reservation set aside for our use is 8 miles long and 4¾ miles wide. Running through the reservation for 8 miles is the Rio Bonito, a beautiful stream, which is fed from the snows of White Mountain, on which the snows are nearly perpetual.

On the reservation there are two very fine springs and many smaller ones. We have beautiful trees and absolutely no dust. Our rainfall is 19 inches for a period covering fourteen years of observation. Our winters average slightly warmer than Albuquerque and much cooler in summer.

There are 38 buildings, all told, most of which are of stone.

Extensive repairs will be made this summer. At present there are 22 patients on hand, the station having been open to receive patients just two months. We are only receiving cases in the first and second stages, therefore we shall fill up slowly.

In the treatment all faith is put in the climate, with constant life out of doors, and to the best food we can give them.

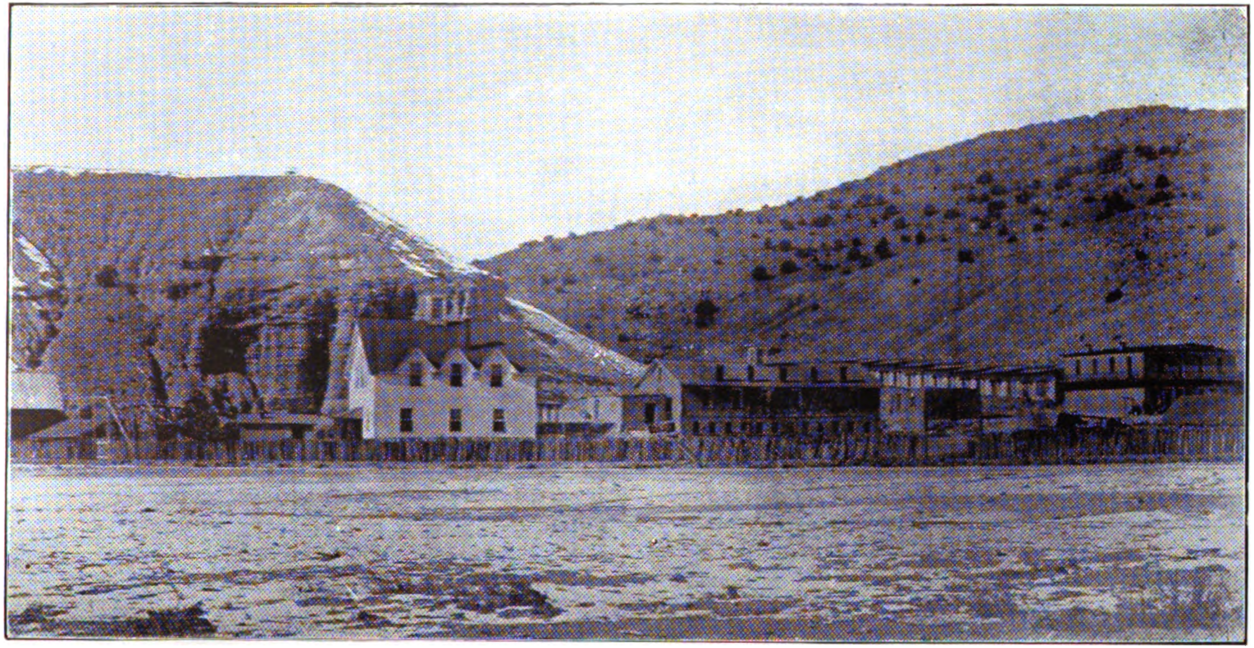
The methods of the foreign sanitariums are followed in many respects.

We intend to raise our own cattle, chickens, etc. At present we are operating a small poultry yard, and make our own milk and butter from a small herd of very fine Jersey cows. In the summer we shall start to make koumiss and kifer. We have 200 acres of alfalfa lands under cultivation for hay for cattle. There is more farming land than we shall be able to use for some time to come.

The patients are encouraged to walk and ride, ponies being furnished when desired. Fort Stanton is 6½ miles from Capitan, a station on the El Paso and Northeastern Railroad, a new road which has just been built from El Paso. The station is outfitted with a complete set of modern surgical instruments and appliances, a bacteriological laboratory outfit, X-ray outfit, and all late apparatus for the treatment of the disease.

Respectfully, yours,
J. O. COBB.

Dr. FRANCIS CROSSON,
Albuquerque, N. Mex.



Ojo Caliente, Joseph's Hot Springs, Taos County, N. Mex.

MARINE-HOSPITAL SERVICE SANITARIUM,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Fort Stanton, N. Mex., June 30, 1900.

DEAR DOCTOR: In answer to your letter of June 26, 1900, I have to state that to date, and which is the end of our fiscal year, there have been admitted 65 patients; 6 have died, 11 have been discharged, and 48 are still under treatment. The class of cases represents all stages, from the most serious to the case in the first stage.

There is connected with the station a farm, dairy with herd of Jerseys, chicken ranch, and vegetable gardens.

During the last fiscal year repairs have been going on slowly. During the coming year a 2-ton ice plant, a complete modern steam laundry, a complete set of steam disinfectors, and all necessary appliances for a modern sanitarium will be installed.

Respectfully,

J. O. COBB,
Passed Assistant Surgeon, U. S. M. H. S.

DR. FRANCIS CROSSON,
Albuquerque, N. Mex.

UNITED STATES GENERAL HOSPITAL,
Fort Bayard, N. Mex., June 28, 1900.

DEAR SIR: In reply to your letter of June 26, 1900, at the request of Maj. D. M. Appel, the commanding officer of this hospital, I have the honor to state that the short time this institution has been in existence precludes the possibility of conveying an adequate idea of the work. However, the first annual report, to be published at the end of the year, will probably furnish all the data you require.

Briefly, to date 142 patients have been received, and 80 are now under treatment. Of the latter 36 are improving, 22 are convalescent (without bacilli in sputum), and 22 are not improving.

Of those discharged 13 are dead, 15 were improved, 13 were unimproved, 13 were convalescent, and 10 were cured.

The treatment here consists of open air and diet.

Hoping that the above will answer your purpose, I have the honor to be,

Very respectfully,

E. BULLOCK,
Acting Assistant Surgeon, U. S. A.

DR. FRANCIS CROSSON,
Albuquerque, N. Mex.

At the Government sanitarium at Fort Bayard there are at present 75 patients from the Army. Dr. Appel, the chief physician, says that the results of the climatic cure of this disease, as shown by the records of this institution, are little short of marvelous. A dozen cases of incipient consumption have been completely cured since the sanitarium was established, nearly a year ago, and in the Government report on the sanitarium, which will be made in a few months, he promises some statistics that will startle the medical world. A large sanitarium is to be established in the immediate vicinity of the sanitarium by Eastern capitalists. The patients at Fort Bayard are given outdoor employment, and are kept out of doors the greater part of the day and night.

CLIMATIC CONDITIONS.

There is no portion of the Union possessing such splendid climatic conditions as exist in this Territory. Here we have a dry, arid temperature, with no extremes of heat or cold, with clear, bright skies and an almost continuous sunshine, that has given New Mexico the well-known sobriquet of "the Sunshine State."

The climate is peculiarly adapted to the cure of pulmonary diseases. A celebrated physician who has given much study to the subject, and who recently made a tour of Europe and America in the interest of this class of the afflicted, investigating the climatic conditions of the various countries with reference thereto, recently stated that the conditions existing in New Mexico were superior to those found elsewhere; that it was an ideal climate for the cure of pulmonary diseases. This is conceded by the best-informed medical experts.

It is probable that at this time there is no disease that afflicts so large a class of humanity with such fatal results as that of pulmonary consumption; none that causes so much suffering, pain, and sorrow. It is a scourge affecting every class, the rich and the poor, the high and the low—all fall beneath its blight and succumb to its dreadful ravages.

Medicinal science has never been able to master it, or to discover medical appliances or remedies that will cure it when once it has a firm hold upon its victim. The greatest minds of the profession have devoted their lives to its study, searching for remedies without avail. All agree that nature's remedy is the best and only cure. Breathing of a pure, invigorating, rarefied atmosphere in an equable climate, with clear, bright sunshine, where the heat of the sun is at its maximum and that of the air at its minimum, are the best conditions for its cure.

All of these conditions are found at their best in New Mexico. In every community may be encountered those who have taken advantage of these life-giving qualities. In a large majority of cases where the invalid has come in the early stages of the disease he has found relief and either been entirely cured or had many years added to his life.

OUR MATCHLESS CLIMATE—PEERLESS AMONG PLACES, NEW MEXICO'S CLIMATE MAKES OF MERE LIVING A LUXURY.

Such are the general features of the climate of New Mexico, diversified, of course, by the peculiarities of each particular place as to whether in the northern, central, or southern part of the Territory; whether in river valley, on low-lying table-land, on higher mesa, or on mountain side; whether in sandy sections, on clayey soils, or in the rude wilderness of rock and gravel; whether surrounded by primeval pine forests, dry stretches of barren prairies, cultivated fields of grains and grasses, luxuriant orchards and gardens and vineyards; whether with eastern, western, northern, or southern exposure—in fact, the modifications are so innumerable in themselves and in their combinations that no two places, even a few miles removed, can be said to have identically the same climate. And yet the same general features pertain to all: Mild winters, cool summers, nights never warm, ceaseless sunshine, dry air, little rain, great altitude, no malaria, and abundance of electricity, making the matchless climate of the world. It is not given to the earth to claim perfection, but New Mexico comes as near perfection in climate as the world can produce. The mere act of living here is in itself an indescribable luxury. The drinking in of its pure, dry, electrified air is like taking an elixir. The walking on its elevated soil, where 7,000 pounds of air pressure have been removed from the ordinary human body, is like treading a new world. To gaze into the vast serenity of its dazzling blue sky, unflecked by cloud, undimmed by storm, is a pleasure never to be forgotten and never growing stale by repetition. To look out over its landscapes, with their sharply contrasted high lights and deep shadows, as of a scene illuminated by electricity, makes other views grow tame upon the eye. In summer, to arise every morning invigorated from a refreshing sleep between blankets, and to retire again in the evening without the lassitude and abject weariness produced by having spent the day in a sweltering sweat box; in winter, to know nothing of the piercing, prying, not to be excluded cold, gnawing its way to your very marrow and curdling as it were the actual blood in your veins—to escape these, and have a winter with but few days when an overcoat is needed by anyone attending to business, and with almost every day permitting invalids to enjoy the sunshine and fresh air by walking, driving, or sitting in the parks, and, on the other hand, to find in summer that fans are never required for comfort, and that as soon as the sun goes down, from the mountain heights and the lofty valleys there come sweeping upon the lower lands cool and invigorating breezes, laden with resinous aroma and surcharged with electricity, carrying health to diseased lungs and throats, strengthening the entire frame, building up the physical man, invigorating depleted brain tissue, restoring destroyed appetite, quieting excited nerves—in a word, turning back the hands of life on the dial of age—to experience these things is to fall in love with the land and to be unwilling ever again to live elsewhere.

TO THE HEALTH SEEKER—EXCEPT WHERE ALTITUDE IS HARMFUL NEW MEXICO INVITES THE AFFLICTED OF THE EARTH.

While every class of invalid, except those suffering from heart trouble, will find relief in the climate and medicinal waters of New Mexico; while miasma is unknown and malaria can not be produced for lack of decaying organisms; while the water is pure and wholesome and the air is tonic in cases of feebleness and debility; while stomach and bowel troubles are unknown among infants, and children are remarkably free from the insidious ills that wait on childhood; while rheumatism and skin and blood diseases vanish before the application of New Mexico's thermal waters; while all these and many others may be beneficiaries of the Territory's matchless climate, it is to the consumptive that this "land of sunshine" is emphatically the land of hope and health. The abundant electricity produces an unusual quantity of ozone from the oxygen of the atmosphere, and the pure, dry air, the ozone, and the balsamic exhalations rolling down from the pine-clad mountains, form an ideal natural medicament for all diseased air passages and mucous membranes, and they, in connection with the altitude, requiring greater lung activity, and the ceaseless sunshine, vitalizing every function of the human frame, will invariably cure consumption if it be taken in time, and if the health seeker avail himself of nature's remedies by a life of outdoor exercise.

There are more men in New Mexico who have recovered from consumption after having been given over by their doctors in the States than are to be found in all the rest of the country put together. They came here, they recovered, and they are now among the leading men of the Territory. Consumption among the natives is absolutely unknown, and the children of consumptive parents coming here from the East grow up without the taint.

NEW MEXICO THE WORLD'S GREATEST CLIMATIC RESORT FOR THE CURE OF CONSUMPTION, THROAT, AND LUNG DISEASES.

Consumption is the scourge of humanity, one death in every six being placed to its charge. When it is remembered what a mighty army of diseases death marshals against the race, and yet that a sixth of the slain is from this one disease, the fearfulness of its curse becomes appalling. It shows that for other diseases science has found remedies, but that against consumption all knowledge and efforts are helpless. Hereditary and contagious, and often originating apparently without either cause; sometimes skipping a generation or certain members of a family, but ever returning for a prey to their descendants; as the race increases and as the appliances of civilization are augmented, cutting wider swaths in the field of human life, and yet laughing to scorn all medical skill and proving obdurate alike to the discovery of the scientists and the nostrum of the charlatan—such is consumption, the invincible lieutenant of death.

STUDY OF STATISTICS.

For some time the gathering of statistics had shown that consumption is much more prevalent in certain sections of country than in others. For instance, the proportion has been stated as Maine 50, remainder of New England States 25, Minnesota 14, Southern States 6, New Mexico 3; the last being less than anywhere else in the United States. But the further study of statistics brought to light the fact that, taking the world over, the greater or less prevalence of consumption accompanied certain marked differences in climate; and soon the climates of greatest and least prevalence became accurately defined. From this it was but a single step to the conclusion that those climates in which consumption least prevailed, or, in other words, which most largely prevented the disease, would be the climates most conducive to recovery from it. This conclusion was the more readily reached because medical science, despairing of materia medica, had been for some time empirically experimenting in the matter of climatic cure.

CLIMATE THE ONLY CURE.

The study of statistics brought to light the fact that those sections were the least affected with consumption which combined the most thoroughly in their climates aridity, altitude, sunshine, scanty vegetation, and absence of extremes in either heat or cold. This much being established, in 1885 the medical congress of France appointed a committee to make a thorough examination in any part of the world that gave promise of the requisite climatic conditions in any considerable degree. It was agreed that the greatest equability was to be found in the valleys of a mountainous country, where of necessity there would be comparative immunity from the winds and storms which sweep over the plains and coast regions. The committee agreed that the proper temperature would be found between the thirty-second and thirty-sixth degrees of latitude, where the patient would not be exposed to the severe weather of the North or the enervating influences of the South. The altitude necessary to give the best degree of atmospheric pressure was held to be about 5,000 feet above sea level, as less altitude gives too much pressure and hastens the destruction of lung tissue, while a higher altitude subjects the patient to the danger of other complaints.

This committee visited Asia, Africa, and North and South America, and agreed that the Rio Grande Valley of central New Mexico was the locality wherein the necessary conditions were found in the highest degree. But one locality—a small territory in the northern part of Africa—compared favorably with it. The American Health Resort Association, in the year 1891, formally decided upon central New Mexico as the most suitable place in the world, and indorsed the report of the French physicians who had investigated the subject.

So much for theory. Now for experience, for when experience—the same, practically, as experiment—confirms theory or hypothesis, demonstration is regarded as established. Doubtless there is still a great deal to learn, but this much may be accepted as definitely determined:

First. That the bacilli of consumption will not develop at a greater altitude than 4,500 feet in combination with a dry atmosphere and abundance of sunshine. The development of the baccilli begun elsewhere will be arrested, and the progress of the disease be checked in all cases where not more than 10 per cent of the lung surface has been affected. Relief has been experienced and practical cures have been wrought where much greater proportions of the lungs have been attacked, but 10 per cent is believed to be the line of comparative safety.

Experience has also demonstrated that dampness of atmosphere furnishes a stimulus to the development of consumption, producing bacilli equaled by no other agency and approached in efficiency only by confinement within doors, cut off from exercise and direct sunshine, and accompanied by the customary inhalation of the superheated and vitiated atmosphere of a sick room. No wonder it is, where the dampness prevails for six months of the year and the other condition is necessitated during the remaining six to protect the invalid from the rigorous cold his weakened vitality is unable to resist, that in such localities consumption runs riot, and to be affected is to die. Yet such conditions prevail over large portions of the habitable globe.

Experience has further demonstrated that, while the most favorable points near the coast are loaded with moisture, this Territory furnishes a dry, germless, healing atmosphere, noted for rarity, aridity, purity, and abundance of ozone and electricity, with the added excellence of practically perpetual sunshine, and seasons destitute of excessive heat or rigorous cold. Thus is met the entire demand for dryness, evenness of temperature, elevation, sunshine, and tonic atmospheric effects—the five prime attributes in the conflict with consumption, nowhere else found combined in such fullness and perfection as in the climate of New Mexico. As incidentally illustrating this claim it may be said that fresh meat is so perfectly cured by hanging in the open air it may be preserved for use indefinitely. Water will remain for months in basins formed by rocks in the mountains without stagnating or becoming impure. A dead animal may lie for months slowly drying and crumbling away, but giving forth no offensive odor.

But investigation has further brought to light the fact that while for ages prior to the conquest of Mexico consumption prevailed exclusively among the Spaniards, and is equally prevalent to-day, yet for centuries the New Mexico Spanish-Americans have been absolutely free from the disease, and the very name of it has long since passed from their vocabulary. Although many consumptives have made their home in this Territory, none of the natives have been known to contract the disease. Also the native born, whether Spanish or of other extraction, possess an absolute immunity, and this seems to apply even to those whose parents are consumptive.

The bearing of this fact is altogether important. If the death rate from consumption in New England is eight and one-third times that of New Mexico, and if the native born, regardless of national descent, have furnished not a unit to the ratio, then must the deaths have been of those seeking this climate for recovery, and they should be credited to the sections whence they came, leaving New Mexico represented by zero in the list. Of course not all who come can be expected to recover. In many instances the patient can not be induced to make the change during the early stages, but, with the fallacious hopefulness characteristic of the disease, resists warning and advice until destruction of the lung tissue is so extensive as to be beyond repair even under the best climatic conditions and treatment. The necessity of being out of doors and active in order to reap the benefits which the climate offers is the testimony of all.

But another fact in this connection has been established, and it is worthy of all consideration. It was presented by Dr. William D. Barton, passed assistant surgeon, United States Marine-Hospital Service, in the North Carolina Medical Journal, January, 1896. After having laid down the proposition that the proper climate for curable or arrestable consumption is now almost as clearly defined as the value of vaccination and the relation of microorganisms to disease, and after clearly stating that in his belief the central portion of New Mexico is the preeminently favored region of the arid West, the most nearly ideal section for climatic treatment of lung troubles accessible to the people of the United States, he says:

> Practically, tubercle germs do not infect here. Children of consumptives grow up heartily. The germs fall on barren ground and do not multiply. Without reckless disregard of all hygienic and preventive measures, this state of things will continue for many years or forever. These arid regions are nature's sanitarium for tuberculosis.

The following extract is from a very interesting paper by Dr. J. L. C. Whitcomb, of Liberty, N. Y. This paper was published in the New York Medical Record of September 25, 1898: "The one point I wish to emphasize with all the force I am capable of—the point, the importance of which overshadows and minimizes every other consideration in the treatment of this subject—is that suitable climatic environments are the absolute requisite of any successful treatment of phthisis, so far as medical knowledge can affirm at the present time. Of no other disease can this be said. In a nutshell, our one rational treatment is: First, early diagnosis; second, a suitable climate. Give the patient the benefit of these, and we give him nine chances to get well to one against it. * * * What is needed is oxygen—the oxygen of pure, dry air. This alone is a specific in early phthisis. It will not cure every case—no specific does that—but it will cure nine in every ten, providing enough of the remedy is taken."

One of the most important medical gatherings of recent times was held at Moscow, Russia. The occasion was the meeting of the International Medical Congress. It brought together more than 7,000 medical men, among whom were the recognized leaders of every civilized country. One meeting was devoted to the discussion of the present methods of treating tuberculosis. The quotations given below are from papers read by some of these great men.

By Dr. Von Ziemssen, of Vienna: "As far back as we can see in the history of medicine, fresh air has been one of the requirements in the treatment of tuberculosis, but it is only of late that the advantage of high altitudes has been clearly demonstrated. That tubercular patients can get a quantity of fresh air in these regions is evident to anyone who has visited the places; * * * but the fresh air that surrounds them is not all—the altitude brings about an excitation of the blood-making organs that increases the corpuscular elements in the blood. Even in health this reaction takes place, but not so markedly as in the diseased states."

By Dr. Senator, of Berlin: "I am convinced that the only treatment of value is the climatic, and I believe high altitudes are of value. I regard altitude as a factor second only in importance to fresh air. Sunlight is also of great value, and the sun's rays themselves exert a particular influence."

By Dr. Von Leyden, of Berlin, Germany, greatest general practitioner: "We must not look to the future; we are living in the present and must treat in the present. So far the only treatment that has given any success is the climatic. My best results have been obtained in mountains. The more comfortable a patient be made there the better, as a rule, will be the results."

By Dr. Kornig, court physician of St. Petersburg: "I have found an increase in the red blood cells in patients who have gone to high altitudes, and I am inclined to attribute to this increase a large part of the benefit derived from mountain sanatoria."

By Dr. Jarvein, professor in the Military Academy of St. Petersburg: "After listening to the greatest authorities in Europe on the treatment of phthisis in mountain sanatoria, I believe there can be but little doubt in the minds of those present that this is at present the only mode of treatment."

By Dr. Vivant, of Monte Carlo, Riviera, France: "The climate must be justly regarded as of value in the treatment of this disease (tuberculosis), and offers a certain number of features in common, viz: Pure air—that is, oxygen—in an unlimited quantity; and dryness—that is, absence of fogs, of air charged with moisture, to interrupt light, heat, and chemical action of the sun's rays."

ESPECIALLY NEW MEXICO.

Dr. George Halley, professor of surgery, Kansas City Medical College, says: "New Mexico possesses the seven great requisites of a sanatorium for the treatment of consumptive patients and those suffering from bronchial and certain forms of throat affections. First, a very dry aseptic air, experiment showing that the atmosphere is as free from harmful bacteria as that of midocean—the purest known to science. Second, a light atmospheric pressure caused by the high altitude of the country, and ample table-lands where the air has free movement and the rays of the sun uninterrupted play. Third, a maximum of sunshine and minimum of cloud. Fourth, a slight variation of temperature only between the extremes of heat and cold. Fifth, a minimum likelihood of sudden changes of temperature. Sixth, a light, porous, dry soil. Seventh (and very important), a low dew-point. I have sent many patients there, and the result has always been beneficial.

"It seems, at first sight, a long distance for patients to travel from France to New Mexico; but there is, I believe, no climate in southern Europe or northern Africa—the localities hitherto utilized for this purpose by Europeans—that can compare for a moment with that of New Mexico and parts of Colorado, for the treatment of consumption."

Speaking of the immunity of New Mexico from consumption, ex-Surgeon-General W. A. Hammond, United States Army, says: "New Mexico is by far the most favorable residence in the United States for those predisposed or affected with phthisis (consumption). In a service of three years in New Mexico, during which period I served at eight different stations, I saw but three cases of phthisis, and these were in persons recently arrived from elsewhere."

Dr. O. D. Walker, professor of physiology and diseases of the nervous system in the Keokuk Medical College, Keokuk, Iowa, and formerly physician in charge at the Government Indian school, Lawrence, Kans., makes the following interesting and valuable report of his observations in New Mexico: "I have carefully observed the salutary effects of this climate upon patients. A young lady, age about 18, came to me July 1, 1896, suffering from incipient phthisis. She was having night sweats, losing flesh, looked pale, and suffered from a very distressing cough. The microscope showed an abundance of tubercle bacilli. I used creosote and injections of Paquin's serum without marked benefit, and finally advised her to go to Las Cruces, N. Mex., which she did. Her cough rapidly improved, and the night sweats stopped; she gained 20 pounds of flesh in a few months and grew strong and hearty. I saw her in Keokuk July 5 last. She seemed to be perfectly well. Had she remained in the Mississippi Valley I think she would have succumbed to this then rapidly progressing disease within six months under any line of treatment."

"The highest interior of our continent comprised in the great table-land extending from the Great Divide in Colorado, through New Mexico, is not excelled anywhere in the world as a resort for consumptives. The altitude, the dryness, the purity of the atmosphere, and the large amount of ozone it contains, combine to create conditions very favorable to recovery from phthisis."—[Dr. Gatchell, in the Medical Era.

"The air here (New Mexico) is very dry, but its rarity is tonic and stimulating. The various altitudes and latitudes give a great variety of climates as to temperature and atmospheric tenuity, but all are alike in dryness."—[F. H. Atkins, M. D., S. B., in the Climatologist.

The Los Angeles Bullion says: "The climate of New Mexico leaves nothing to desire, and it constitutes an element of growth and prosperity in the future that is too important to remain neglected."

"New Mexico is fast becoming a favorite resort for consumptives, and as physicians learn more of its advantages it will grow still more rapidly in favor. Its uniform temperature, almost constant sunshine, and its dry, rare atmosphere are elements that commend this climate to our consideration."—[F. E. Waxam, M. D., professor of laryngology and rhinology, College of Physicians and Surgeons, Chicago.

"I think New Mexico surpasses any locality for consumptives I have yet visited, and I have been all over California, Colorado, the South, the Sandwich Islands, and Europe. * * * I am decidedly of the opinion that the region visited is, for consumptives, superior to any other part of the United States or the world, of which I have any practical knowledge."—[J. F. Danter, M. D., in Medical Visitor.

The Kansas City Medical Record, a high authority on such matters, in an editorial upon the subject of "Health resorts," speaks as follows: "It has been a great satisfaction to us to find our opinion regarding the sanitary characteristics of New Mexico indorsed in a most significant manner by some very high authorities on the subject. Some time ago a party of medico-scientists, commissioned by the Société Médicale of France, arrived in New Mexico, after inspecting many parts of the world held in high esteem as winter and summer resorts for consumptives. Their object in thus journeying was to examine and report upon the sanitary qualifications of these different localities and countries, the end in view being the location of a large sanatorium for the treatment of consumption. The commission (with, we believe, the exception of one member, personally interested in another locality) reported upon New Mexico as in every respect better suited for such a purpose than any country they had visited, including far-famed Algeria and other places heretofore noted as health resorts, especially emphasizing the fact that a case of consumption was never known to have originated in New Mexico."

But the strongest proof, however, that the central part of New Mexico is superior to all other sections of the United States for the climatic treatment of consumption has just been given by no less an authority than the United States Government itself. The abandoned military reservation of Fort Stanton, in this Territory, has become by Presidential order the property of the Marine Hospital Corps, and the work of fitting the place up as a sanitarium for consumptives in the marine service is now in active progress. As soon as the buildings can be made ready for their reception, all the consumptive patients in all the marine hospitals of the country will be taken there.

Surgeon-General Wyman says the establishment of such a sanitarium is a matter that he has had in mind for many years, his object being to place the patients where they will be under the best natural conditions and at the same time be isolated from the rest of the world, thus securing the maximum of advantage to the afflicted and the minimum of danger to the public.

The late Dr. Bratton, of the Marine Hospital Corps (already quoted from in this article), was stricken with consumption, and was restored to perfect health by a sojourn of two years at Albuquerque.

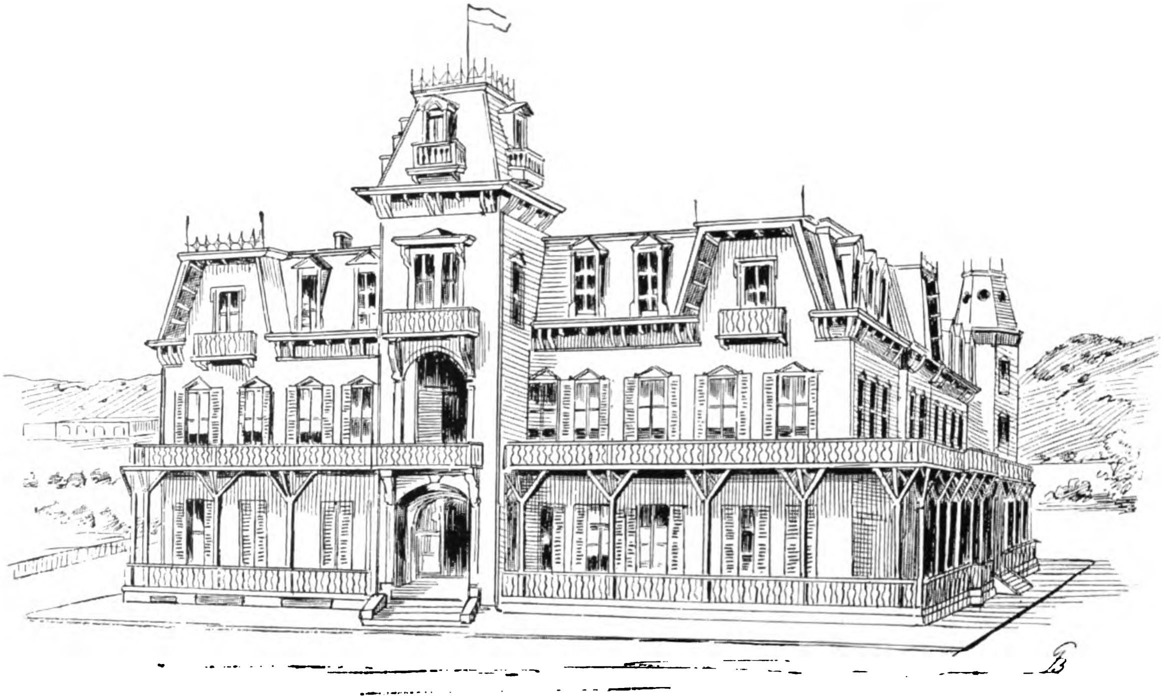
Dr. Bratton was instructed by the Surgeon-General of the United States to prepare a report upon the benefit of the New Mexico climate to consumptives, and also to make an examination of all the Government property in the Territory which there was any chance of the Marine Corps securing for a sanitarium for consumptives, giving his opinion about the different sites. He made an exhaustive report upon the subject, and agitation began for the donation of some Government reservation in New Mexico to the Marine Hospital Corps to be used as a sanitarium for consumptives.

This agitation resulted in the corps securing the abandoned reservation at Fort Stanton, with all its buildings and improvements, and the Surgeon-General considers it an ideal place for the purpose. Dr. Cobb, of the Marine Corps, is already on the ground with a strong force of laborers, and the work of putting the place in readiness for the reception of patients is progressing rapidly. There are thirty-eight good buildings on the reservation, and it is thought they will afford ample room to accommodate all the consumptive patients from the various hospitals now being used along the coast, and as soon as these buildings can be made ready for the reception of all patients of this class, they will be taken there at once. It is hoped by physicians, and by the friends of humanity generally, that this experiment will do much toward pointing out the way to the ultimate control of this terrible malady.

It may be added to the foregoing that Fort Stanton is a beautiful place, the main buildings inclosing an open square several hundred feet in diameter. The ample grounds surrounding, which will be beautifully kept, will add much to the comfort and pleasure of the patients and invalids, and will enable them to spend the greater portion of their time in the open air and sunshine, which plays so great a part in the recovery from this terrible disease.

But the asthmatic or the consumptive is not the only invalid who may turn his eyes with hope to this Mecca of the afflicted.

To the overwrought, mentally or physically, to the run down from dissipation or disease, to the prostrated, whether from devotion to business or pleasure, to those who have lost appetite, lost the pleasures of sleep, lost interest in life, whatever the cause or reason—to all these New Mexico extends her hands of healing. Her bright skies and radiant sunshine; her pure, dry, rarified air, surcharged with electricity and saturated with ozone, tonic, and invigorant; her incomparable nights, cool, refreshing, delightful, making sleep the greatest of all luxuries and absolutely incompatible with insomnia—these are the things that come of merely being in the climate, and bring their blessings of quieted nerves, restored strength, increased flesh, regained appetite, and recovered sleep, just simply whether we will or not. Such are the climatic conditions of New Mexico, to which hundreds of people who have been benefited will gladly testify.



PALACE HOTEL, SANTA FE, N. MEX.

THE SUPERB CLIMATE.

A knowledge of the contour of New Mexico in relation to the surrounding country is necessary to clearly understand the cause of its climatic advantages, that are not possessed by any other part of the United States. A study of the Rocky Mountain region reveals the fact that the great chain from the far north is broken in its continuity as it leaves Colorado. In New Mexico there are smaller ranges, with here and there lofty peaks with timbered slopes and barren crowns to relieve the clouds of moisture. From them incline fertile valleys and grassy upland plains to the Gulf region until, when the southern border is reached, there are no mountains between New Mexico and the southern water. Three-fourths of this Territory has an altitude of 5,000 feet. At the southern border the valleys have dropped to from 3,000 to 4,000 feet, while the Santa Fe valley, at the capital city, has an altitude of 6,967 feet at the plaza.

A country of such varied altitudes must have some variety in climate, but the variation is in degrees of temperature mainly, for in general the climate of New Mexico is dry and salubrious. The rainfall is principally confined to showers in the summer, with little rain or snow in the winter, except in the northern part of the Territory.

Near the extreme southern line, in the Sacramento Mountains, a lofty peak is the first considerable elevation met with, as the moisture-laden gulf clouds drift to the northwest, and this precipitates rain to greater extent than any other mountain, the rainfall there having, in exceptional seasons, been estimated at 48 inches. But over the Territory the normal precipitation ranges from 8 to 35 inches, according to elevation.

COMPARATIVE TEMPERATURE.

The southern valleys are, of course, the warmest portion of New Mexico in the summer, but the hottest are pleasanter in midsummer than the east, because the air is dry, rapidly absorbs the moisture of the skin, and has a cooling effect. The weather is never oppressive, the nights are always cool enough to sleep under cover, and generally under a blanket.

Santa Fe being up out of the great valley of the Territory is especially blessed as to summer temperature. The highest record by the thermometer in this city in twenty-six years was 96° in 1887—an extreme rarely approached. In the last ten years 91° was the highest absolute temperature. It should be borne in mind that in a dry climate the record of the metallic thermometer does not indicate the real temperature felt by a human body, which is cooled by the drying effect of the air. It has been demonstrated that a temperature of 90° at Santa Fe is not more oppressive and heating than 72° at St. Louis, or at any place with a humid climate.

The following table was made up from reports of the climate and crop service of the Weather Bureau, and gives a general idea of the relative intensity of heat as indicated by the metallic thermometer:

Station.	Mean temperature.				Mean relative humidity.
	8 a.m.		8 p.m.		
	Absolute.	Sensible.	Absolute.	Sensible.	
Boston	60	56	62	58	79
Buffalo	59	54	62	56	71
Chicago	57	53	63	56	72
Cincinnati	60	56	69	60	70
Denver	51	46	67	54	57
Des Moines	53	51	63	57	77
Detroit	56	53	61	56	78
Galveston	78	74	81	74	76
Kansas City	58	55	67	61	78
Memphis	66	61	77	66	66
New Orleans	74	71	79	72	79
New York	61	58	65	60	80
Philadelphia	64	59	68	61	72
St. Louis	61	58	70	63	77
San Francisco	56	54	60	56	84
Santa Fe	52	47	66	52	56
Washington	64	60	68	63	78

SANTA FE IN SUMMER.

Were Santa Fe located in sight of St. Louis or Chicago, with its present elevation, residents of such place would behold a city more than a mile and a quarter skyward, above the hot, malarial, moisture-soaked earth, in a purer atmosphere, which all would seek. Should they behold the city where she is, they would find a still cooler and purer atmosphere, where there is little moisture, a porous soil to drain away the rain that comes, and a precipitous descent for escape of the snow-fed streams and gorges in sight of the city.

The records show that no other city in the same latitude possesses so cool a summer temperature as Santa Fe, where the average is 67 degrees, and the change between night and day temperature too slight to be detrimental to health. Thanks to elevation, to wooded mountains far southward, and shelter from the hot winds of Arizona that are warded off by the rising series of mountain ranges between Santa Fe and the sandy, lower levels of desert, this city throughout the summer is the coolest south of the upper lake region. It is far cooler than Denver, has thermometer readings about as low as San Diego, and is free from the humid heat of the coast.

THE WINTER SEASON.

One who has not seen the lay of the land might think that an elevated place having so delightful a summer climate would have a severe winter. Yet this is not true. The winter temperature is not so low as in the lower Ohio valley, and is free from moisture, there being less of cloudy weather in winter than in summer. To the north, the great mountains of Colorado receive the greatest snowfall, and break the force of northern winds; other mountains closer stand guard to shelter the Santa Fe valley, which lies at their feet. To the east a range keeps out the cold northers as they rush southward to Texas. Westward, also, nature has interposed barriers to shield New Mexico from gales, and when a wind finds its way up the winding Rio Grande, Santa Fe receives but the feather-edge of the blow.

NEW MEXICO SANITARIUMS.

Sunny, bright days mark the winter season, which, until Christmas at least, is quite as delightful as the glorious summer, though crisp and cool. Even the spring months in Santa Fe can not be equaled for mildness in any Eastern State. While hundreds of tourists visit the city in summer and make a more or less protracted stay, the number who come to remain permanently for the curative effect upon tuberculous diseases is all the while increasing. The proportion of the latter will be undoubtedly enlarged in consequence of the indorsement given New Mexico's climate by the United States Marine-Hospital Service, which has in 1899 established two permanent sanitariums in the Territory and will maintain them as homes for soldiers and sailors afflicted or threatened with tubercular troubles. Many years of life at New Mexico army posts and a careful examination by experts led the authorities to take this action in the interest of military invalids, and it is also intended to remove to New Mexico consumptive inmates of Soldiers' Homes in California and Eastern States.

Favorable conditions exist all over New Mexico for restoration to health or for improving the condition of such sufferers; a dry, aseptic air, light atmospheric pressure, well-drained soil, a minimum of cold and heat, the absence of great changes in temperature, and a maximum of sunshine.

SUNSHINE RECORDS.

As to the latter point, the latest figures available from the Government records are those of 1897, the year book of 1898 having not yet been published. The summer of 1897, as it happened, was unusually cloudy and rainy at Santa Fe, yet the superiority of this city in the matter of days that were sunny throughout can be seen by a few comparisons with places in various parts of the country.

Stations.	Temperature.		Percentage sunshine.	Precipitation.	Number of days—			
	Maximum.	Minimum.			Clear.	Partly cloudy.	Cloudy.	Rainy, .01 inch or more
Boston	94	2	53	40.77	183	70	162	121
Buffalo	95	0	....	37.72	65	145	155	156
New York	91	5	59	44.27	130	108	127	185
Philadelphia	96	7	60	42.04	105	124	136	183
Chicago	95	−20	50	25.85	137	114	114	125
Kansas City	102	− 4	57	30.21	144	111	110	100
St. Louis	101	− 2	64	40.17	151	90	124	115
Cincinnati	98	−10	58	43.89	162	99	104	121
Memphis	100	10	....	46.03	160	108	97	106
Denver	96	−14	68	5.37	98	180	87	89
Santa Fe	85	− 1	70	20.40	176	149	40	120
El Paso	102	17	....	12.41	195	128	42	51

NOTE.—The minus sign (—) used before figures above indicates below zero.

The Government records do not show that any place in the United States excels Santa Fe in sunshine, year in and year out, the average number of hours of sunshine daily in a period of five years being seven hours and forty-five minutes, which is just about right for variety, comfort, and health.

A favorable point in comparison with the East is that the most sunshine here is in the fall and winter, November leading, while in the East the sun is more in evidence in the summer months, when it is sometimes neither wanted nor needed.

GOOD ADVICE TO CONSUMPTIVES.

A short time ago Dr. John Tascher, with his wife and daughter, left Albuquerque to enjoy a few weeks among Chicago relatives and friends. While at Chicago the doctor left for Washington, and while in the national capital was interviewed as follows by a representative of the Washington Post:

> Dr. Tascher said:
>
> Consumptives who go to New Mexico should make it their business to get well. They should have money enough to keep them from worrying. They should go there for rest and not for sight-seeing. Above all else, they should disabuse their minds of the idea that they will get well in a month, or three months, or six months. It takes longer than that. They should be free from bother. This they can not be if they are looking for employment. There are twenty applicants for every job that is vacant. Then, again, sick people do not want work. They should be free to use reserve strength in casting off the disease. New Mexico will be the greatest health resort in the world. It has the best advantages. The climate is the best in the world. We have more mineral springs, containing different healthful properties, than any other place known in any part of the civilized world, none excepted. I have visited all of the famous health resorts and know that none of them has the advantages possessed by New Mexico.

Five years ago Dr. Tascher was a practicing physician in Chicago. He contracted consumption. He came to New Mexico. For the first two years and a half he did not get better. He lost in weight and in general health. He remained here, however, as he says, to get better. To-day he is robust. He weighs more than he ever did before in his life. He has had no trace of the disease for over a year. He went back to his old home and surprised his friends by his altered appearance. They expected to attend his funeral. Instead, if appearances are to be relied upon, he will outlive his old friends.

THE TAOS VALLEY.

The Taos Valley is a natural basin, about 25 miles broad and 35 miles long. It is entirely surrounded by mountains, the Sangre de Cristo Range on the north, east, and south and the Continental Divide on the west. It is one of the best watered and drained portions of New Mexico, the Rio Grande flowing through its center from north to south.

THE COUNTY SEAT.

Taos, the county seat, has about 1,500 inhabitants, 2 hotels, 3 churches, and 3 schools. It is a typical adobe town, and reminds travelers of Egypt. Taos is situated on the southwestern slope of a spur of the Sangre de Cristo Mountains.

PRECIPITATION.

The average precipitation in the Taos Valley is about 10 inches per year. The soil is a sandy loam. Eight never-failing streams flow through the valley from the mountains to feed the Rio Grande.

ALTITUDE AND SUNSHINE.

The altitude is about 6,300 feet, and this makes it an ideal resort for invalids; warm, bright, sunshiny days and cool nights. The roads are good for driving, riding, and bicycling. Fishing and hunting are unexcelled. In fact, it is an ideal place for one who wishes to recuperate. The climate and drainage are perfect. Good hotels, with plenty of good, nutritious food, are located in the town. Farming and fruit and stock raising offer advantages for those who desire a permanent place to locate.

A SALUBRIOUS DISTRICT.

Typhoid and malaria are unknown, and it seems to be a country of longevity. Here we see many men and women from 80 to 100 years old. Acute diseases are almost unknown.

AN HISTORIC REGION.

It is a safe estimate to say that there are over 300 sunshiny days in a year in the Taos Valley. The tourist and health seeker will find here many things to interest them, particularly the Taos pueblo, called by Lummis "The American Pyramids." Here one can study the customs of centuries ago, folklore tales, and try to fathom out the secrets of the "kivas" or council chambers and many ceremonial functions and mystic dances. Here one can find rest from the daily monotony of an active life and recuperate his gray matter. It is an ideal spot for a summer's outing and will compare favorably with a trip to Egypt, while not taking up so much time and being less expensive.

EASY OF ACCESS.

There are many hot springs scattered throughout the county, affording fine bathing facilities. The Taos Valley is easy of access by daily stage, either via Embudo or Tres Piedras, stations on the Denver and Rio Grande Railroad.

THERMAL SPRINGS OF NEW MEXICO.

Excepting the famous Yellowstone National Park, situated in the northwest corner of Wyoming, there is no other locality outside the Territory of New Mexico that contains so many natural thermal springs. This fact is not generally known throughout the States, and I avail myself of the opportunity to say a few words about these health shrines of nature's own furnishing, so frequently sought by the unfortunate sufferer from disease. Many persons not informed upon the natural resources of their own country annually flock abroad to seek relief from the waters of the various European "spas." Many of these persons might be induced to visit the great natural springs so numerous in this Territory could the matter of their medicinal merit be brought to notice in such a way as to show them that what they seek abroad can readily be found at home, and that in curative properties the natural mineral springs of New Mexico excel many of those of European repute.

Accurate analyses made by competent chemists show the composition of most of the springs found in New Mexico to be superior in many respects to those enjoying the highest reputation in Europe and in other countries. Many of these places are far removed from the general line of travel, but those best known to-day are easily accessible to the tourist and health seeker, and are reached by good roads and stage lines. Many of them are equipped with modern hotels and bathrooms, good food, good service, healthful surroundings; in fact, ideal conditions to carry out a line of treatment where regularity, isolation, physical and mental rest are important factors. It would be a work of supererogation to attempt an enumeration of the many afflicted persons who have visited these springs, taking a course of the waters, and returning to their homes greatly benefited in health. A glance at the chemical composition of many of these waters will show that they compare favorably with many of those most sought in various parts of the world.

The geologic processes are so recent in New Mexico that nearly every county in the Territory has its healing, hot, or mineral springs. The purpose of this article is only to give a few facts concerning the more accessible resorts. Many important places are necessarily omitted, because the average tourist would be unable to visit them.

In geograpical order the first to be mentioned are—

FOLSOM HOT SPRINGS.

Situated near Alps, a station on the Denver, Fort Worth and Texas Railroad, 59 miles south of Trinidad, on the summit of the Raton range of mountains, close to the extinct volcano of Capulin, in Colfax County, near the northern boundary of the Territory. The altitude is about 6,500 feet, and the location is very beneficial for consumptives. They have fine medicinal properties and promise to become of prominence.

LAS VEGAS HOT SPRINGS.

In San Miguel County, at the mouth of the picturesque Gallinas Canyon, on the banks of the Gallinas River, is situated the Las Vegas Hot Springs, famed throughout the length and breadth of the land for their curative virtues in innumerable diseases.

The springs are twenty-two in number, and from analyses made by Prof. F. V. Hayden, of the United States Geographical Survey, the following is extracted:

Constituents.

	1.	2.	3.
Sodium carbonate .... per cent..	1.72	1.1	5
Magnesium carbonate .... do....	1.08	10.6	10.43
Sodium sulphate .... do....	14.12	15.43	16.21
Sodium chloride .... do....	27.26	24.37	27.34
Potassium .... do....	Trace.	Trace.	Trace.
Lithium .... do....	St. trace.	St. trace.	St. trace.
Silicic acid .... do....	1.04	Trace.	2.51
Iodine .... do....	Trace.	Trace.	Trace.
Bromine .... do....	Trace.	Trace.	Trace.
Temperature .... degrees F..	130	123	123

In its chemical composition this water resembles in many respects the waters of the famous hot springs of Teplitz, in Austria, while in its two chief active constituents, the carbonate and sulphate of sodium, it may recall the somewhat analogous, though very much stronger, waters of Carlsbad, justifying in a degree the name often given it of "dilute Carlsbad water." The dilution, however, is more frequently a benefit than a disadvantage, for it permits a larger amount of the water to be taken, thus securing the valuable solvent and eliminating powers of the water itself, together with the remedial virtues of its mineral constituents.

OJO CALIENTE (HOT SPRINGS).

These celebrated hot springs are located in the midst of the ancient Cliff Dwellers, 25 miles west of Taos and 50 miles north of Santa Fe, N. Mex., and about 12 miles from Barranca Station, on the Denver and Rio Grande Railway, from which point a daily line of stages run to the springs. The temperature of these waters is from 90° to 122° F. The gases are carbonic. Altitude, 6,000 feet; climate very dry and delightful the year round. There is now a commodious hotel for the convenience of invalids and tourists, and the reputation of these wonderful medicinal waters is fast spreading. These waters contain 1,686.34 grains of alkaline salts to the gallon, being the richest alkaline hot springs in the world. An analysis of these waters shows a total of 288.09 parts in 100,000, divided as follows:

Sodium carbonate	196.95
Calcium carbonate	4.20
Iron carbonate	20.12
Sodium chloride	40.03
Arsenic	10.08
Lithium carbonate	1.22
Magnesium carbonate	6.10
Potassium sulphate	5.29
Silicic acid	4.10

JEMEZ HOT SPRINGS

Are in Bernalillo County, in Santiago Canyon, being a branch of the Jemez Creek, which 9 miles south connects with another branch running through Guadaloupe Canyon. To reach them one has to travel from Santa Fe by wagon road to Peña Blanca, 27 miles distant west, crossing the Rio Grande there, and thence keeping a western course through the foothills of the Valles Mountains to Jemez pueblo, 26 miles; from there it is 13 miles to the first group of springs, at Archuleta post-office; or from Bernalillo, on the Atchison, Topeka and Santa Fe Railroad; also by wagon road past Santa Ana and Zia (or Silla) pueblos to San Ysidro and thence to Jemez pueblo, where this road and the former join, distant 27 miles.

Both roads are sandy, but the latter especially so, running for about 13 miles through Jemez Canyon.

A much better road, running from Archuleta north and northeast through the mountains and ending at Espanola, has recently been constructed.

There are several groups of hot springs in Santiago Canyon, but those at Archuleta, and 2 miles farther north, are most frequented. At Archuleta are ample hotel accommodations. Many health seekers prefer the "upper group" and camp there. At both places the scenery is enchanting and the atmosphere dry and healthy.

The lower springs, at Archuleta post-office, have an altitude of 6,620 feet above sea level. Limestone and sandstone of the Carboniferous age form the sides of the canyon, 1,000 feet high, often changed from their original position by volcanic substances. There are here:

1. A geyser with an opening of 1 square foot, a temperature of 168° F., running about 50 gallons a minute, with escaping carbonic acid and deposits of white carbonate of lime.

2. A spring of 130° F. with free carbonic acid and red-brown deposits.

3. A spring of 119° F. with "alga" (cryptogamic water plants). A black sulphate of iron forms on them, a result of the action of sulphureted hydrogen upon carbonate of iron and oxide of iron in the alga. The sulphureted hydrogen is a product of the reduction of gypsum.

There are more springs with a temperature from 102° to 108° F. The total salts in 100 parts of water amount to 0.2401 parts of sodium, lime, and magnesia. These springs are especially beneficial to rheumatic diseases.

The upper group, 2 miles from Archuleta, in the same canyon, consists of 42 springs. Their elevation is about 6,740 feet above sea level and their temperature varies from 70° to 105° F.

They flow from caves of carbonate of lime, some of which are 20 feet in height. Combined they form a dam or dike 30 feet high and 200 feet long. The springs contain 37.26 parts solids in 100 parts water, mostly chloride of sodium and sulphate and carbonate of soda, lime, and magnesia. They greatly resemble the famous Marienbad.

Besides the hot springs, north of the upper group are cold mineral springs. Halfway between the two groups is an extensive ruined pueblo.

CHERRYVILLE SPRINGS.

In Socorro County, at Cherryville, is the next occurrence of noted springs. These are found near the head of the cañada or falls of the Alamosa, whence Geronimo started out on his famous raid. They are accessible by stage from Engle, a station on the Atchison, Topeka and Santa Fe Railroad. They are on the eastern slope of the Black Range. The temperature is 130° F. and the altitude 6,540 feet.

GILA HOT SPRINGS.

In the southwestern part of Socorro County, on the west of the Gila or Diamond Creek, as it is called, is a group of springs, at 5,545 feet altitude, that are easily reached by wagon from Silver City. The temperature is 130° F. and they carry similar ingredients to the Jemez Springs.

APACHE TAJOE SPRINGS.

Four miles from Whitewater, on the Atchison, Topeka and Santa Fe Railroad, are also found some good springs of 97° F. They are in Grant County, 30 miles north of Deming.

Twenty-four miles north from Deming, and within 3 miles of Hudson, on the Santa Fe road, are several good springs. These springs are widely known and much frequented, both on account of their medicinal value and the lovely climate and beautiful scenery.

Some other undeveloped springs are about 3 miles north of Hudson Hot Springs.

It remains to be said that close to the western boundary of the Territory are several other locations of hot springs, of which one is about 10 miles southwest of Zuni and one in the valley of the San Francisco River, the latter at an altitude of 5,630 feet above sea level and having an average temperature of 84° F., largely used by the Indians and the people of the vicinity.

HUDSON HOT SPRINGS.

In the Hudson Hot Springs, New Mexico possesses a water which for its curative properties rivals the famous Carlsbad waters of Europe. Indeed, there is living evidence that the Hudson Hot Springs have cured ailments to which the waters of Carlsbad offered no relief.

The Hudson Hot Springs are situated 25 miles from Silver City on a plateau 5,000 feet above the level of the sea. The Hotel Casa del Consuelo is a large, magnificent structure, built on the old Spanish style, being one story high, having three sides built around the plaza. Every one of the 67 rooms are outside rooms, which assures perfect ventilation and hygienic results. The rooms are large, with tall ceilings, and are equipped with all modern sanitary appliances and conveniences. Bathrooms and closets and stationary washstands are scientifically constructed with the best plumbing. Each room, too, is heated with hot water, which comes direct from the spring, which has a temperature of 142° F. This temperature is maintained the year round, and that of the room can be regulated according to the desire of the occupant.

The climate of New Mexico, which in the vicinity of the Hudson Hot Springs is found at its best, is directly beneficial to a patient suffering from almost every disease that flesh is heir to. There are 900 feet of broad veranda on the three sides of the hotel. Here the visitors promenade, deriving beneficial results from the absolutely pure atmosphere, or lounge about in settees or rockers, reading and conversing. The culinary department is presided over by an accomplished chef, who appreciates and caters to the delicate tastes of the guests. The dining room is large and commodious, capable of seating 200 persons. There are billiard parlors, reading rooms, where all the magazines and metropolitan papers are on file, barber shop, whist rooms—indeed everything necessary to the convenience and comfort of the patrons of the house.

The bath house, which is located in the Avenue of Oaks, about 100 yards from the hotel proper, is constructed after the most improved plans. There are 14 bathrooms equipped with the finest porcelain bath tubs, the best of plumbing, and are presided over by experienced masseurs and bathroom attendants. The water may be used at any temperature desired by the patient. It is customary, however, to enter the water at a temperature of about 95°, increasing it to 120°. The bather is then placed under the shower bath and put on the table and rubbed by the masseur, then wrapped in blankets and placed on a cot, where he enjoys a restful and helpful sleep for a couple of hours or so.

The waters of the Hudson Hot Springs are of natural mineral properties, and are peculiarly adapted to the cure of rheumatism, stomach, kidney, liver, and bladder troubles. The following analysis, made by Prof. Arthur Goss in 1898 shows how closely the Hudson Hot Springs waters resemble the Carlsbad waters in constituent parts:

Total solids, 39.59 gr.

Lime (CaO)	5.50
Magnesia (MgO)	1.46
Soda (Na_2O)	11.17
Potash (K_2O)	1.52
Iron and aluminum	.28
Silica (SO_2)	4.10
Sulphates (SO_3)	4.21
Carbonates (CO_2)	9.98
Chlorides (Cl)	1.77
	39.99
Less oxygen, eq-of-Cl	.40
	39.59

Temperature, 142° F.

The following testimonials are selected from many given in personal interviews with patrons of the hotel in May:

"For twenty years," said H. C. Moore, of El Paso, Tex., "I have been coming to these springs for relief from one of the most severe cases of inflammatory rheumatism. By remaining here two weeks each year and taking the baths, I am able to go through the remainder of the year a well man, and entirely free from the intense pains resultant from the disease. I have visited all the principal springs in the world, but never found relief until I came here. I wish that every rheumatic in the United States could come here for a few weeks and know what it is to go away well."

One of the most remarkable results of the efficacy of the Hudson Hot Springs water is seen in the condition of Mr. John D. McLeod, a merchant of Boston. "What I tell you," said Mr. McLeod, "will not be believed by the majority of your readers, yet what I say is true, and there are a dozen people here at these springs now by whom I can prove it. I was brought here on a cot, being unable to walk because of my several infirmities. In the first place, I had inflammatory rheumatism so that my head was bent forward until my chin rested upon my breast. For years I was forced to carry my head in that position. As you see, I am now able to carry it as a well person. When I came here the breathing capacity of my lungs was confined to the region of the apex. My chest was so sore that I could not bear the weight of my hand upon it. My lung expansion is now nearly two inches. My heart when I came here had 130 beats to the minute. It is now reduced to about 100. Instead of being carried about on a cot by reason of inflammatory rheumatism in my lower limbs, I am now able to walk two and three miles per day. Then I could not speak above a whisper; to-day I can shout as loud as a person in ordinary health; then, as I have said, I could not bear the weight of my hand upon my chest; to-day I can strike it with my clenched fist in this fashion," and Mr. McLeod administered a blow on his chest that would have knocked a well man several feet backward. "What has accomplished this miraculous cure?" asked Mr. McLeod. "The climate and these remarkable waters of Hudson Springs. The miracles of the early Christian days are not more marvelous than my recovery during the four months that I have been here. My doctor informs me, and I, too, am confident of the fact that if I continue to improve as I have been improving, I will be a well man within a year. These are facts, and if there is a person in the United States afflicted with the ills I have recounted, my advice is to come here; and if there is anybody who wishes to communicate with me by letter, I will gladly give them more details."

The scenery about Hudson Hot Springs is picturesque and romantic. Within two miles of the springs are the buried ruins of an ancient Aztec village. The City of Rocks, being a miniature city probably a mile square, built of rocks, with streets, alleys, etc., formed by nature's master hand, is within thirty minutes' riding distance of the hotel. Trips to the adjacent cattle ranches form a pleasant recreation for the guests.

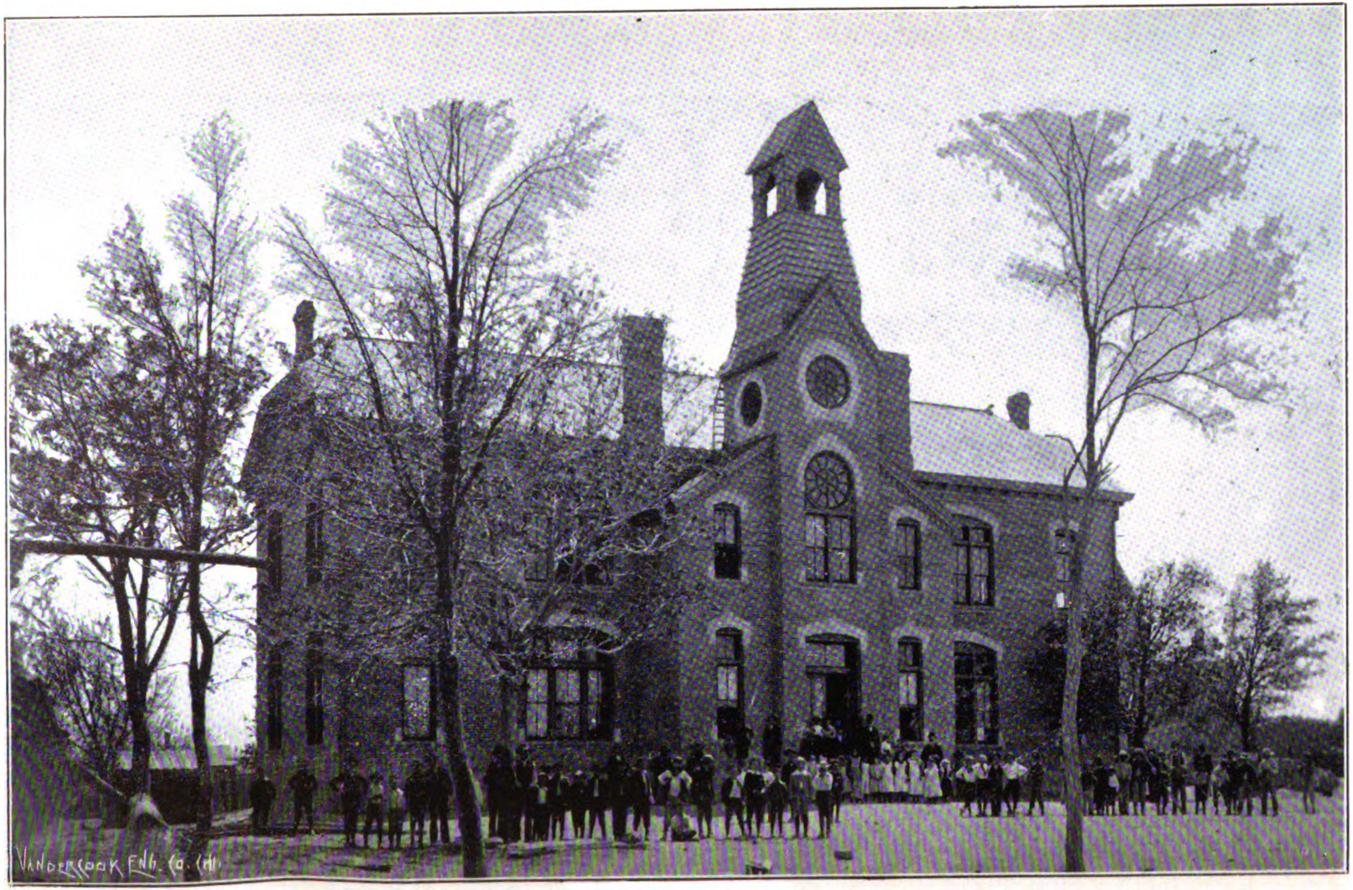
The hotel and springs are owned and managed by Mr. T. C. McDermott, formerly of Minnesota. He is a genial host, taking watchful care of his guests, and rendering every assistance possible to the restoration of their health and to increase their daily comforts. The post-office address is Hudson Hot Springs, Hudson, N. Mex.

WONDERFUL SPRINGS.

S. S. McKibbon returned to Santa Fe recently after an absence of nearly a year at the Hot Sulphur Springs and Hugh Murray's San Antonio Springs, in the Valle Mountains, 40 miles west of Santa Fe. He stands as a living example of what those springs will do for a man who is sick nigh unto death. When he left here in July last none of his friends had any other idea than that he would die in ten days or so. He took 115 baths at the sulphurs and 20 at Murray's Springs and comes home with the glow of perfect health upon his face, a changed man in every sense. He says it is a shame that suffering humanity should be kept in ignorance of the remarkable curative powers of these medicinal waters. He states that they have been known to cure even cancer, and cites the case of one Riley, a carpenter at Bland, who came there a few weeks ago, his left side wholly paralyzed. Eleven baths restored him completely. There are about twenty persons at the sulphurs now. If the waters were properly advertised there would doubtless, he thinks, be as many hundred spending the summer there. By way of Buckman's Mill the distance from Santa Fe to these springs is 46 miles. Mr. McKibbon says the settlers of that entire region are anxious to do their trading with Santa Fe merchants, being able to do better here than at another point, and there is talk of improving the Buckman Mill road. Merchant Louis Zellhoffer passed over this road with a load of supplies the other day, and he says repairs on 6 miles of the road will make it passable for all manner of vehicles and insure to Santa Fe a lucrative business from that section.

AZTEC SPRINGS.

This is a cold-water spring situated 4 miles east of Santa Fe. From the surrounding hills and ridges a magnificent view is had of the country for many miles, including the city of Santa Fe, the valley of



PUBLIC SCHOOL, SOCORRO.

the Rio Santa Fe, and portions of the valley of the Rio Grande del Norte, together with the magnificent mountain ranges in different directions.

Col. D. L. Huntington, surgeon, U. S. A., and curator to the United States Medical Museum, says of this spring: "The water contains 18 grains to the gallon of solid material, and it resembles many of the celebrated German springs, and would be found very useful in such diseases as catarrh of the bladder and all forms of dyspepsia and intestinal indigestion. The water is also useful as a gentle and constant tonic."

Anyalsis of this water made by F. W. Clark, chief chemist of the Smithsonian Institution, Washington, D. C., shows it o contain the following per 1,000 parts:

Silica	0.220
Carbonate of calcium	1.538
Magnesium	.605
Sodium chloride	.225

With enough carbonic acid gas to retain the carbonates of calcium and magnesium in solution as bicarbonates.

Such healing waters, taken in connection with the pure, dry, and bracing climate of the mountains, should surely prove a boon to those affected with many forms of disease, and the attention of physicians throughout the country is invited to the many merits they possess in the treatment of numerous forms of disease.

BUREAU OF IMMIGRATION.

BUREAU OF IMMIGRATION OF NEW MEXICO,
OFFICE OF THE SECRETARY,
Santa Fe, July 1, 1900.

SIR: In compliance with your request, I have the honor to submit herewith the following report of the operations of the bureau of immigration for the year ending June 30, 1900:

During the past twelve months the business of the bureau has progressed much the same as during the twelve months preceding. One thousand copies of the Report of the Governor of New Mexico to the Secretary of the Interior upon the conditions and resources of the Territory for 1899 have been purchased by this bureau, and 820 copies thereof have been distributed during the year, being sent out to applicants for the same. During the same period about 3,000 pamphlets on the climate and hot springs of the Territory, published by this bureau, have been distributed in the same manner. About 4,000 pamphlets on mines and the mining industry of New Mexico, and about 2,000 pamphlets on horticulture, agriculture, and irrigation, have also been used for distribution.

This bureau was represented by a delegate, viz, its president, L. Bradford Prince, at the session of the trans-Mississippi congress at Houston, Tex., in April last; at the session of the mining congress in Milwaukee in June last, and at the session of the farmers' congress at Colorado Springs, Colo., in August last. At each of these sessions about 2,000 pamphlets of different kinds were distributed by the said representative to delegates and to those inquiring for them. During the national encampment of the Grand Army of the Republic in Chicago, Judge John R. McFie, commander of the department of New Mexico, distributed 1,000 pamphlets on climate, and also on mines and the mining industry, and horticulture and agriculture in the Territory, at the headquarters of his department, to such persons as visited the headquarters and applied for the same. The advertising that New Mexico has received in this manner is evidently doing a great deal of good. During the past year it is estimated that more tourists visited the Territory than ever before. There are now within its borders more health seekers than ever before. Several parts of the Territory have received considerable immigration during the past five months, and part of this immigration can be directly traced to the work done by this bureau and the distribution of pamphlets.

Everything indicates that more mining investors and more capitalists have visited New Mexico the past twelve months than at any time during the past sixteen years and since the New Mexico boom days of 1881, 1882, and 1883. This is pretty well demonstrated by the great activity in mining, in the organization of mining companies, and in the many sales of mining property that have taken place in New Mexico within the last twelve months.

There are now in process of preparation and in the hands of the printer pamphlets—one on climate and climatology which is about completed and will be ready for distribution within a few days; one on mines and mining in New Mexico, and others—descriptive of matters pertaining to horticulture, agriculture, sheep raising, and cattle growing in the Territory. There is also now being prepared by the undersigned a pamphlet on the general conditions and history of New Mexico, which, however, will not reach the public for some weeks. It is found that this pamphlet advertising, illustrated if possible and containing separate subjects, is the very best of its kind that can be had. It is also demonstrated that illustrated pamphlets, where such illustrations are appropriate, do more good than any other.

From its information the bureau estimates that the census will show a white population in the neighborhood of 200,000 in the Territory, as against 153,000 for the year 1890. This is believed to be much below the actual figures, but is probably as correct as can be had under the system of census enumeration adopted by the Government. The actual population this bureau estimates to be at the present time about 225,000 and probably more. There has been quite an increase in the counties of San Juan, Grant, Colfax, Chaves, Eddy, Dona Ana, and Otero. None of the counties have retrograded, and while a few of them have been stationary, nearly all will show some increase. It must be remembered that the census of 1900 contains the enumeration of but very few United States soldiers, whereas the census of 1890 contained quite a number of such.

The executive office of the bureau of immigration is located at Santa Fe, which is believed to be the most central and the best place for the office, as a great many tourists and health seekers come to Santa Fe, as also a great many people from the States who have business in the Territory, find it to their best interests to stop off and visit Santa Fe in order to become acquainted with the Territorial and Federal officers, and very often to transact official business at the capital.

The collection of a mineral exhibit has been commenced by the bureau for the purpose of having the same on exhibition in its offices at the capital. While the beginning is small and not much progress has been made up to date, it is believed that in the next few years a very fair mineral collection will be the result.

It is found from actual observation that one of the most valuable advertising documents that has been distributed by the bureau has been the report of the governor of the Territory for the past three years.

During the past twelve months about an average of 100 letters per month have been received asking information concerning the Territory, which have been answered in each case, with such information as it was possible to give. This, in addition to many requests for pamphlets and newspapers, all of which were promptly attended to. The business of the bureau is constantly on the increase, and the work of answering the letters of inquiry in the proper manner is becoming quite arduous.

I am, sir, very respectfully,

Max. Frost,
Secretary of the Bureau.

Hon. M. A. Otero,
Governor of New Mexico.

CAPITOL CUSTODIAN COMMITTEE.

Santa Fe, N. Mex., *September 8, 1900.*

Your Excellency: In reply to your inquiry of the 7th instant, directed to the capitol custodian committee, I beg to submit the following:

The building erected by the Territory for a capitol to replace the one destroyed by fire May 12, 1892, was completed and by the capitol rebuilding board turned over to the Territory on the 4th day of June, 1900, and this board received the building from your hands at the dedication upon that date.

The various Territorial officers—the governor, secretary, auditor, treasurer, solicitor-general, superintendent of public instruction, land commissioner, adjutant-general, Territorial librarian, and the supreme court officials—immediately occupied the offices which had been prepared for their use, and without an exception they have expressed themselves as having been provided with convenient and abundant accommodations for all of their official functions and duties. The halls provided for the council and house of our legislative assembly are such as have excited the admiration and encomiums of visitors from the Territory and abroad, and with their vaults, committee rooms, and lobbies can not but furnish the assembly with every convenience for facilitating the work of the legislature and the comfort and welfare of its members. The furniture in the building is of the most substantial character, and for the present answers every requirement.

We congratulate your excellency upon the completion of this grand building during your administration, marking as it does an epoch in the history of the Territory and evidencing the determination of the people of New Mexico to be with the advance of civilization in every respect.

Very respectfully, yours,

SOL. SPIEGELBERG,
President Capitol Custodian Committee.

Hon. MIGUEL A. OTERO,
Governor of New Mexico.

REPORT OF COMMISSION ON IRRIGATION AND WATER RIGHTS.

I beg to submit herewith report made to me by the above-named commission during the last legislative assembly held in Santa Fe, N. Mex., on January 16, 1899, which is as follows:

The undersigned, constituting the commission of irrigation and water rights in the Territory of New Mexico, appointed pursuant to the act of the legislative assembly approved March 18, 1897, respectfully submit the following report:

The law under which the commission was appointed is the following:

AN ACT creating a commission of irrigation and water rights. C. B. 127; approved March 18, 1897.

"*Be it enacted by the thirty-second legislative assembly of the Territory of New Mexico:*

"SEC. 1. A commission is hereby created to consist of the president of the council and the speaker of the house of representatives of the thirty-second legislative assembly of the Territory of New Mexico, three resident citizens of this Territory to be selected by said president and speaker jointly, which commission is hereby directed to inquire into the conditions existing in different portions of the Territory with reference to irrigation and water rights, to examine the laws upon this subject in force in this Territory and in other States and countries, and to recommend to the next legislative assembly such legislation as in the opinion of said commission shall meet all requirements on this subject.

"The members of the said commission shall meet within sixty days after the adjournment of the thirty-second legislative assembly at such place as they may agree upon and organize by the election of a president and secretary from among their number.

"It shall be the duty of such commission to embody in a report to the governor of the Territory all possible information concerning the subject of irrigation and water supply, the amount of land in the Territory cultivated by the means of irrigation, the extent of the present and proposed systems of storage reservoirs, and such other facts as they may deem proper and useful, which report shall be published at least twenty days before the beginning of the next session of the legislature.

"SEC. 2. The members of the commission hereby created shall serve without pay or compensation, but their expenses while actually engaged in the performance of the duties prescribed by this act shall be paid by the Territorial treasurer out of any available funds in his hands, and the Territorial auditor is hereby authorized and directed to draw his warrant upon the treasurer for such expenses upon certificates signed by the president and secretary of such commission.

"SEC. 3. This act shall take effect and be in force from and after its passage."

The members of the commission met at Santa Fe within the time prescribed by said act, and organized by electing Anthony Joseph president and Joseph E. Saint secretary. Meetings were subsequently held at Albuquerque on the 9th and 26th of October, 1898.

At the first of these meetings plans were adopted for carrying on the work devolving upon the commission, receiving reports of subcommittees and of the different members touching special matters referred to them, and at the latter meetings the material for the final report was fully considered and the text of the report formulated.

After dividing up the work of gathering information among the several members of the commission in the first instance, it was found that the examination of existing conditions in the Territory and the accumulation of the facts relating thereto would require an amount of work and a degree of technical knowledge which none of the members could furnish. After a careful consideration, and after consultation with the governor and obtaining his approval, we employed Mr. P. E. Harroun, an accomplished civil and hydraulic engineer, for a limited time, to make such investigation and report as was deemed necessary to enable us to comply with the law.

The investigations made by the several members of the commission and the facts set forth in Mr. Harroun's report have convinced us that the greatest need of New Mexico upon the subject of irrigation and water rights at the present time is not new legislation, but accurate information. Acting, as we have done, without compensation, it was not practicable for the members of the commission to devote any considerable time to the gathering of facts of the kind desired. These are only to be obtained by actual observation in the field, and to be of real service this can only be done by a trained observer familiar with the approved scientific methods of studying such a subject. The data bearing upon the flow of water in streams, variable as are those of New Mexico with the time of the year, the drainage area of localities favorable for the collection of surface and torrential waters for storage, and the quantities of land susceptible of reclamation by storage or additional irrigation by improved methods, can for the most part only be collected for practical use by systematic observation and record of facts, often extending through months and years. The facts presented in this report are, as to a large part of the Territory, necessarily general, and not based upon the systematic study above alluded to. In the northeastern and southeastern parts of the Territory, where the Maxwell and Pecos companies, respectively, have constructed extensive irrigation systems on a large scale and according to modern scientific methods, it is possible to secure reliable and instructive data. In the greater part of the Territory, however, the lack of detailed observation and systematic record prevents anything more than a fair general statement of conditions and results at the present time. No work of this kind has ever been done by the Territory. The small amount of it that has been done by the Government has been confined to the Rio Grande Valley.

While, therefore, the members of the commission feel that they have accomplished about as much as was reasonably practicable under the circumstances, they regard their report as suggestive of what might be done by a better organized effort, rather than as of any great permanent value in itself.

There are certain matters now requiring attention, of vast importance as regards the future of the Territory, which seem to us to imperatively call for further and more complete investigation in the line of the work intrusted to us:

First. The selection of lands donated by Congress to New Mexico in aid of irrigation and the reclamation of arid lands, and for the maintenance of educational and other institutions.

The law making this donation, enacted June 21, 1898, is as follows:

'AN ACT to make certain grants of land to the Territory of New Mexico, and for other purposes.

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That sections numbered sixteen and twenty-six in every township of the Territory of New Mexico, and where such sections, or any parts thereof, are mineral or have been sold or otherwise disposed of by or under the authority of any act of Congress, other nonmineral lands equivalent thereto, in legal subdivisions of not less than one-quarter section, and as contiguous as may be to the section in lieu of which the same is taken, are hereby granted to said Territory for the support of common schools, such indemnity lands to be selected within said Territory in such manner as is hereinafter provided: *Provided,* That the sixteenth and thirty-sixth sections embraced in permanent reservations for national purposes shall not at any time be subject to the grants of this act, nor shall any land embraced in Indian, military, or other reservations of any character be subject to the grants of this act; but such reservations shall be subject to the indemnity provisions of this act.

"SEC. 2. That fifty sections of the unappropriated nonmineral lands within said Territory, to be selected and located in legal subdivisions as hereinafter provided in this act, shall be, and are hereby, granted to said Territory for the purpose of erecting public buildings at the capital of the State of New Mexico when said Territory shall become a State, and be admitted into the Union, when said capital shall be permanently located by the people of New Mexico for legislative, executive, and judicial purposes.

"SEC. 3. That lands to the extent of two townships in quantity, authorized by the sixth section of the act of July twenty-second, eighteen hundred and fifty-four, to be reserved for the establishment of a university in New Mexico, are hereby granted to the Territory of New Mexico for university purposes, to be held and used in accordance with the provisions in this section; and any portions of said lands that may not have been heretofore selected by said Territory may be selected now by said Territory. That in addition to the above, sixty-five thousand acres of nonmineral, unappropriated, and unoccupied public land, to be selected and located as hereinafter provided, together with all saline lands in said Territory, are hereby granted to the said Territory for the use of said university, and one hundred thousand acres to be in like manner selected, for the use of an agricultural college. That the proceeds of the sale of said lands, or any portion thereof, shall constitute permanent funds, to be safely invested, and the income thereof to be used exclusively for the purposes of such university and agricultural college, respectively.

"SEC. 4. That five per centum of the proceeds of the sales of public lands lying within said Territory which shall be sold by the United States subsequent to the passage of this act, after deducting all expenses incident to the same, shall be paid to the said Territory, to be used as a permanent fund, the interest of which only shall be expended for the support of the common schools within said Territory.

"SEC. 5. That the schools, colleges, and university provided for in this act shall forever remain under the exclusive control of said Territory, and no part of the proceeds arising from the sale or disposal of any lands herein granted for educational purposes, or of the income thereof, shall be used for the support of any sectarian or denominational school, college, or university.

"SEC. 6. That in lieu of the grant of land for purposes of internal improvement, made to new States by the eighth section of the act of September fourth, eighteen hundred and forty-one, which section is hereby repealed as to New Mexico, and in lieu of any claim or demand of the State of New Mexico under the act of September twenty-eighth, eighteen hundred and fifty, and section two thousand four hundred and twenty-nine of the Revised Statutes, making a grant of swamp and overflowed lands, which grant it is hereby declared is not extended to said State of New Mexico, the following grants of nonmineral and unappropriated land are hereby made to said Territory for the purposes indicated, namely:

"For the establishment of permanent water reservoirs for irrigating purposes, five hundred thousand acres; for the improvement of the Rio Grande in New Mexico, and the increasing of the surface flow of the water in the bed of said river, one hundred thousand acres; for the establishment and maintenance of an asylum for the insane, fifty thousand acres; for the establishment and maintenance of a school of mines, fifty thousand acres; for the establishment and maintenance of an asylum for the deaf and dumb, fifty thousand acres; for the establishment and maintenance of a reform school, fifty thousand acres; for the establishment and maintenance of normal schools, one hundred thousand acres; for the establishment and maintenance of an institution for the blind, fifty thousand acres; for a miner's hospital for disabled miners, fifty thousand acres; for the establishment and maintenance of a military institute, fifty thousand acres; for the enlargement and maintenance of the Territorial penitentiary, fifty thousand acres. The building known as the Palace, in the city of Santa Fe, and all lands and appurtenances connected therewith and set apart and used therewith, are hereby granted to the Territory of New Mexico.

"SEC. 7. That this act is intended only as a partial grant of the lands to which said Territory may be entitled upon its admission into the Union as a State, reserving the question as to the total amount of lands to be granted to said Territory until the admission of said Territory as a State shall be determined on by Congress.

"SEC. 8. That all grants of land made in quantity or as indemnity by this act shall be selected by the governor of the Territory of New Mexico, the surveyor-general of the Territory of New Mexico, and the solicitor-general of said Territory, acting as a commission, under the direction of the Secretary of the Interior, from the unappropriated public lands of the United States within the limits of the said Territory of New Mexico.

"SEC. 9. That said commission shall proceed, upon the passage of this act, to select said lands, for each purpose as hereinbefore designated, in legal subdivisions, of not less than one-quarter section, and shall report to the Secretary of the Interior such selections, designating in such report the purpose for which such bodies of land as selected are to be respectively used as provided above in this act.

"SEC. 10. That the lands reserved for university purposes, including all saline lands, and sections sixteen and thirty-six reserved for public schools, may be leased under such laws and regulations as may be hereafter prescribed by the legislative assembly of said Territory; but until the meeting of the next legislature of said Territory, the governor, secretary of the Territory, and the solicitor-general shall constitute a board for the leasing of said lands; and all necessary expenses and costs incurred in the leasing, management, and protection of said lands and leases may be paid out of the proceeds derived from such leases. And it shall be unlawful to cut, remove, or appropriate in any way any timber growing upon the lands leased under the provisions of this act, and not more than one section of land shall be leased to any one person, corporation, or association of persons, and no lease shall be made for a longer period than five years, and all leases shall terminate on the admission of said Territory as a State; and all money received on account of such leases in excess of actual expenses necessarily incurred in connection with the execution thereof shall be placed to the credit of separate funds for the use of said institutions, and shall be paid out only as directed by the legislative assembly of said Territory, and for the purpose indicated herein. The remainder of the lands granted by this act, except those lands which may be leased only as above provided, may be sold under such laws and regulations as may be hereafter prescribed by the legislative assembly of said Territory; and all such necessary costs and expenses as may be incurred in the management, protection, and sale of said lands may be paid out of the proceeds derived from such sales; and not more than one-quarter section of land shall be sold to any one person, corporation, or association of persons, and no sale of said lands or any portion thereof shall be made for less than one dollar and twenty-five cents per acre; and all money received on account of said sales, after deducting the actual expenses necessarily incurred in connection with the execution thereof, shall be placed to the credit of separate funds created for the respective purposes named in this act, and shall be used only as the legislative assembly of said Territory may direct, and only for the use of the institutions or purposes for which the respective grants of land are made: *Provided*, That such legislative assembly may provide for leasing all or any part of the lands granted in this act on the same terms and under the same limitations prescribed above as to the lands that may be leased only, but all leases made under the provisions of this act shall be subject to the approval of the Secretary of the Interior, and all investments made or securities purchased with the proceeds of sales or leases of lands provided for by this act shall be subject to like approval by the Secretary of the Interior.

"SEC. 11. That there is hereby appropriated from the unexpended funds in the Treasury of the United States, ten thousand dollars, or so much thereof as may be necessary, to be expended under the direction of the Secretary of the Interior, for the purpose of paying the expenses of the selection and segregation of said respective bodies of land, including such compensation as the Secretary of the Interior may deem proper.

"SEC. 12. That all acts and parts of acts in conflict with the provisions of this act, whether passed by the legislative assembly of said Territory or by Congress, are hereby repealed."

It will be apparent to everyone acquainted with the conditions existing in New Mexico that the location and selection of these lands is going to be a matter of enormous importance, and that it will depend solely upon an intelligent selection whether they shall ultimately become salable or productive of income by way of rental so as to accomplish the purposes for which the law is designed. There are large quantities of public land in the Territory which never will become salable at the price fixed by the law, and which could not be leased for any appreciable interest on that price. especially with the restriction as to quantity of land to be leased or sold to any one person. On the other hand, there are many localities where lands will ultimately attain the maximum value of farming lands by reason of their proximity to eligible sites for future water-storage and irrigation systems. To be of permanent value, a large part of the donated land ought to be selected with reference to their future reclamation in this way. For such selections there is at the present time no reliable guide. The information in possession of the United States surveyor-general would not suffice for this purpose. Nothing short of an examination by competent hydraulic engineers would furnish the facts which are absolutely essential.

Second. The injury to the people of New Mexico by the increased and constantly increasing appropriation of water from the head tributaries of the Rio Grande in Colorado.

Sooner or later this is bound to become an interstate question, and in order that the interests of New Mexico shall be properly guarded it will be essential that her representatives be armed with absolute and accurate information touching the flow of water in the Rio Grande and its tributaries, covering not only present conditions, but an accumulation of statistics as to the past. Colorado, with its well-organized and liberally supported State engineering department, has a great advantage over us in this respect. Nothing short of a systematic study of these matters, continued through several years, will be adequate to enable us to meet this question when it comes to an issue.

Third. Possible future legislation.

The interests of irrigation are not uniform throughout the Territory on account of the wide differences in latitude, elevation, and character of productions. This is why, as we show further on, any attempt at legislation beyond the general principles already well established is not advisable at the present time. It is impossible, with the information now in hand, to determine beforehand whether any given scheme of legislation desired by and applicable to one part of the Territory may not be the cause of great injury and injustice to another. To enable future legislators to exercise their proper and only legitimate function, viz, that of enacting laws for the benefit of the whole people, the information which might be accumulated by further systematic investigation of these water questions will be absolutely necessary.

One of the duties imposed upon the commission by the act creating the same was the examination into the laws with reference to irrigation and water rights in force in New Mexico, and in other states and countries, and to recommend such legislation as, in the opinion of the commission, will meet all requirements of this subject.

Serious attention has been given to this branch of their duties by the members of the commission, who have brought to their aid the experience and advice of many of the prominent citizens of the Territory and elsewhere, deeply interested in the study and possibility of irrigation. One of the most serious impressions resulting from a study of this branch of the commission's labors is that great embarrassments or losses will almost inevitably occur in making any change that trespasses upon the general system of laws now in force; a very large part of our people, thoroughly understanding the rights which they now have in and to waters beneficially used by them, are strongly distrustful of any proposed change thereof, the demonstration of the result of which they have not seen in practical working. There is a widespread and largely justifiable impression prevailing that the result of changing the present irrigation laws of the Territory in any essential respect would be to disturb vested rights, and to unsettle public confidence in legal rights which have long been owned and beneficially used in the great portion of the waters of our streams. For this reason it was determined by the commission, after thoroughly canvassing the subject at its first meeting, that any and all recommendations from the commission along this line should be of the most conservative character, and that, before any change in the laws was recommended, there should be a close study of the laws and methods of enforcing them as now existing, and unless it was apparent that changes could be recommended which would be of considerable advantage to the public at large, it would be better to recommend that no changes whatever be made. With this spirit the commission, through its committees, entered into the task of the analysis of the present laws of the Territory. These were found to consist of certain Territorial statutes, of several acts of Congress, and of principles announced by the supreme court of the Territory independent of statute.

The first statutory law we have on the subject is the provision of the Kearny Code of 1846, to the effect that all laws in force at the time of the promulgation thereof, concerning water courses, should continue in force. Kearny Code, September 22, 1846, Tit. Water Courses. Sec. 1. (Compiled Laws, 1897, page 89.)

This reference was, undoubtedly, to the Spanish-Mexican laws then in force with reference to the control of water; and, while the commission has not seen fit to go into a special study of the laws thus referred to, it is believed that such reference thereto was intended to apply to the system of community ditch laws, which at that time regulated the rights of the owners thereunder in this Territory, in common with the great body of Mexican possessions in the arid section, and that, at such time, almost all rights claimed by the citizens of New Mexico in the waters of any of its streams were by virtue of such community laws, and that the individual rights of private owners of ditches had not at that time assumed such value as to attract the necessity of legislation to protect the same.

The assumption that the language referred to in the Kearny Code was directed particularly to rights owned under the community system received additional strength from the fact that the legislative assembly of 1851 and 1852, following close upon the promulgation of the Kearny Code, adopted a set of laws with reference to the community ditch system, which laws were largely the crystallization into statutes of the principles theretofore governing such questions, and the customs arising thereunder. Act of July 20, 1851, page 189. Act of January 7, 1852, page 276. (Compiled Laws, 1865, chap. 1, secs. 1–8. Id., secs. 9–26.)

It is to the Spanish-Mexican laws, therefore, and to legislative enactments beginning in 1851, continuing more or less to the present time, that we owe the present acequia laws of the Territory. The continuance of this system, admirably adapted to the necessities of the people living in the most thickly inhabited parts of the Territory, has been productive of good results where the spirit of the law has been enforced.

Amendments to the laws of 1851 and 1852 were enacted in 1861, regulating the working on public acequias. Act of January 29, 1861. (Compiled Laws, 1865, secs. 27-32.) Also, in 1863, regulating the control of ditches by overseers. Act of January 28, 1863. (Compiled Laws, 1865, secs. 33-39.) Also, in 1866, regulating the repair and relocation of ditches when injured or destroyed by floods. Act of January 18, 1866, pages 90-96. (Compiled Laws, 1897, chap. 1, secs. 25-30.)

In 1874 the legislature extended the right to all persons to construct private acequias and take water therefor from any available source, with a provision for compensation of the owners of the land through which the necessary ditches were constructed; and simple and inexpensive methods were prescribed by which such terms should be assessed and such rights recognized. Act of January 9, 1874, page 28. (Compiled Laws, 1897, chap. 1, secs. 23, 24.)

On February 24, 1887, an act was passed, applicable only to corporations, providing for the organization of such for the purpose of constructing and maintaining reservoirs canals or ditches, and pipe lines, in order to supply water for irrigation, mining, manufacturing, domestic and other public uses, including cities and towns, and for the purpose of colonization and improvement of lands in connection therewith. This act gave full authority to corporations formed thereunder to acquire water and water rights, either by purchase or condemnation, and to construct ditches, canals, and reservoirs to be used in connection therewith. Laws of 1887, chap. 12, page 29. (Compiled laws, 1897, chap. 1, secs. 468-493.)

On February 20, 1889, an act was also passed providing that incorporated towns and villages exceeding in population 3,000 persons should have certain priority for the use of water in streams upon or near which they are situated. Laws of 1889, chap. 70, page 150.

On February 26, 1891, another act was passed providing a method by which a record of the subsequent construction or enlargement of any ditch, canal, or feeder for a reservoir taking water from a natural stream should be made, and by which legal appropriation of water should be made, and defining in some particulars the essentials of such legal appropriation. Laws of 1891, chap. 71, page 130. (Compiled Laws of 1897, secs. 493, 494.)

These acts are the only ones announcing any principles adopted by the Territory for the determination of rights respecting water, and, together with two or three minor acts authorizing various counties to assist in irrigation enterprises, and the act of February 13, 1893, exempting all irrigation ditches, canals, and reservoirs from taxes for a period of six years after the commencement thereof, they form the body of Territorial enactments on the subject of water rights.

It will thus be seen that, while our statutory laws on this subject are fragmentary, there is no contradiction or unprogressive feature incorporated in any of the same. On the other hand, they have been found to be simple, in the main logical, and in view of the conditions, both of land and people, have been proved to be beneficial in their workings to the great body of the people. An analysis of these laws shows that they provide for and protect the Spanish-Mexican theory, under which, as stated above, good results have been attained, and that they also protect and encourage individual enterprises, and that the principles of such laws, as reenforced by the interpretation of the courts, protect each system from any trespass whatever upon the other.

As the ideal of beneficial legislation is the least possible regulation necessary with reference to a given subject, it would appear that our legislators in the past have most promoted the irrigation interests and the development of the Territory by their remarkable conservatism in legislating upon this subject. Few laws have been deemed necessary other than the community system of laws above mentioned, and these have, as above stated, been enacted. The principles of these laws are easily construed by the courts, and very little difficulty is found in following and putting them into effect. There is no subject with reference to which the laws of the Territory (both the community and private water appropriations) are better understood by the people, or with reference to which principles are more definitely established. We are very largely indebted for this, not only to the above legislation and the decisions of our own courts, but to the decisions of all the courts in the arid States and Territories, in all of which the right to appropriation of surplus waters of all streams is recognized and upheld, qualified only by the doctrine that priority in time gives priority of right; that rights claimed must be perfected with due energy; that the appropriation must be made for beneficial purposes and is limited to the amount needed for such purposes.

While the legislation of the various States and Territories varies considerably, yet it is believed that all of them recognize this doctrine as above defined. In several of the States and Territories it was early contended that the acts of the citizens thus taking possession of and diverting the water from the streams thereof were contrary to the principles of the common law, which recognizes the rights of riparian owners along such streams; and because of this belief and the confusion into which some of the courts fell in interpreting the rights thus claimed, as well as because of the fact that the rights claimed by different appropriators were found, in many instances, to trespass upon each other, a great amount of litigation, in which the doctrine of the right of appropriation has been involved, has arisen all over the West. Through this litigation it is believed that all questions capable of giving rise to embarrassing disputes concerning the uses of water have practically been settled and adjusted and the public made familiar therewith. There is a great unanimity of decisions in establishing such principles, and where there is any serious variance it has been caused by local statutes. Indeed, so common was the acquiescence of the public in the rights and principles which governed the appropriation of water, that early in the history of the arid West the Congress of the United States recognized such rights by the law now embraced in sections 2339 and 2340 of the Revised Statutes thereof, which read as follows:

"SEC. 2339. Whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the rights of way for the construction of ditches and canals for the purposes herein specified, is acknowledged and confirmed.

"SEC. 2340. All patents granted or preemption or homesteads allowed shall be subject to any vested and accrued water rights or rights to ditches and reservoirs used in connection with such water rights as may have been acquired under or recognized by the preceding section."

These enactments of Congress have been repeatedly construed by the Supreme Court of the United States, and the opinions contained in such decisions and the announcement thereof have been a material assistance to all of the States and Territories affected thereby, and have greatly promoted the unanimity of judicial decisions referred to above.

It is therefore apparent that though, as above stated, legislative enactments of this Territory with reference to this subject are fragmentary, yet, in view of the settled customs prevailing all over the arid West and of the enactments of Congress above referred to, additional legislation has not been and is not now essential in this Territory to fully guarantee to the people the full and beneficial enjoyments of rights which they have always claimed and now possess. Neither is it believed that any of the statutory enactments have incorporated in the body thereof any vicious principles which might operate to impair the interest of irrigation in the Territory. The result of the laws providing for such systems so enforced in New Mexico with reference to the creation of litigation arising therefrom is the best evidence of the wisdom of that system; and while there have been from time to time some complaints of irregular diversion of water at the expense of proprietors below, yet the least number of cases have ever gone beyond the trial court, and comparatively few have been commenced even; such as have arisen have been settled in the main speedily and without hardship to those having the better right to such waters.

One result of our system of laws on this subject is that when such a case arises our courts, not being hampered with conflicting and untried provisions as some other courts of our Western States and Territories, have the great body of principles as decided by other courts of last resort to draw from in the adjustment of their decisions along the line of equity and good sense and the widest possible latitude in putting their decisions into effect.

A notable case has recently been tried in one of the southern counties of the Territory, involving the most complicated issues and a vast number of litigants, having some 30 or 40 parties thereto, and involving as many claims of priority for different appropriations; after the evidence had been taken the district court (under our laws as they now stand) found no difficulty whatever in adjusting the priorities of all of these parties, and in providing by its decree a method for the distribution among all of those found to have rights thereto the insufficient supply of water over which they were litigating. This was a celebrated case, and was watched with great interest by the public; and it is believed that the result thereof brought peace to the whole community and established firmly the rights of each claimant, protecting the same as against the trespass of any other claimant, and providing a method for the distribution of the waters in such manner as could hardly have been reached under any system of legislative enactment in any of the Western States or Territories. It was a satisfactory demonstration of the wisdom of the present status of the development of our Territory, simply announcing by legislative enactment the general principles and leaving our courts to enforce the same by jurisdictional methods, as may be deemed equitable in each particular case.

The commission has not been unmindful of that part of the act creating the same wherein it was directed to examine the laws of other States and countries in determining what legislation should be recommended to the legislative assembly, and has made such study thereof as it was possible for it to make without going to the places where such laws were in effect. The legislation of such States and Territories has been carefully read, as have the decisions of the courts based thereupon. Much that is admirable has been found to be incorporated in the legislation of nearly every State, along with much which it would have been best to have omitted, and in some instances it has resulted in great confusion of principles. The system adopted in each State has been found to be the result of the needs of that particular jurisdiction, and the conditions are more or less different in each State from those that obtain in any other State.

Much of this great system of laws would no doubt be of great benefit if the conditions to which the same is intended to be applied existed in our Territory, but in the opinion of the commission they would be valueless if ingrafted into the law here, from the fact that the conditions, both as to soil, climate, water, and the disposition of the people are entirely different from those of the localities where such laws are enforced; indeed, it is the varying conditions of nearly every section of this Territory as to these essentials which renders the work of your commission in determining what laws should be made applicable a difficult one. General principles, of course, can be made to apply all over the Territory, but when it comes to the regulation of water rights and the rights upon which irrigation is dependent in detail, those which would be highly beneficial in one section of our Territory would doubtless be found detrimental to other sections thereof, dependent upon altitude, climate, different character of the soil, and the necessities of the people.

After the fullest consideration which the commission has been able to make of the laws of our Territory and those of the various Western States and Territories, it is our deliberate and unanimous conclusion that the principles governing the law of water and the rights connected therewith in force in this Territory are sufficiently just, progressive, and simple, and that the courts have sufficient jurisdiction and authority at present to fully determine and enforce the same with justice to all, and that no change of any of the principles so enforced would be advisable, and it therefore recommends that no legislation with reference to any of such principles is at present advisable.

EXPENSES OF THE COMMISSION.

The following table shows the total expenses incurred by the commission:

To P. E. Harroun, engineer for commission, four and one-third months, at $200 per month	$866.66	
To P. E. Harroun, expenses while in employ of commission	102.90	
		$969.56
To expenses of members attending the various meetings of commission:		
George Curry	47.00	
George Curry	41.00	
Antonio Joseph	54.00	
J. E. Saint	20.30	
Frank Springer	6.50	
(W. A. Hawkins made no claim.)		
		168.80
Printing and stationery:		
Daily Citizen	$6.00	
Daily Citizen	3.00	
Democrat Publishing Company	9.00	
Democrat Publishing Company	6.00	
O. A. Matson & Co. (letter book)	1.00	
		$25.00
Typewriting for commission:		
Clara H. Olseun	19.35	
Clara H. Olseun	1.40	
R. L. Hunt	50.00	
		70.75
Total expenses of commission		1,234.11

No salary or compensation of any kind to members or officers of the commission is included, and, as will be seen by consulting the items, but a very small amount was incurred for personal expenses of members in attending the meetings. The principal expense is for the employment of the engineer. Of the foregoing expenses only the sum of $360.55 has been paid. By correspondence with the Territorial auditor it was developed that he was not satisfied as to his authority to draw warrants for the payment of the whole of the expenses of the commission. We recommend that an appropriation be made by the legislature to meet these bills.

By the foregoing statement of expenses it will be seen that work of the character already done and herein indicated as desirable for the future can be carried on with considerable economy. The total expenses so far incurred, including the employment of an engineer, is only $1,234.11.

We suggest that the work which we have recommended might be advantageously continued under the auspices of a commission something like the present one, consisting of men representing the different sections of the Territory, not confined to any political party, and serving without pay. Such commission to be authorized to employ a competent hydraulic engineer to make annual investigations, and reports to be submitted to each succeeding legislature. The expenses to be incurred by the commission to be limited to a definite amount and fixed by appropriation. In this way, at a comparatively small expenditure, a series of reports would be produced which would be of permanent value to the Territory.

Dated December 15, 1898.

Respectfully submitted.

ANTONIO JOSEPH, *President.*
JOSEPH E. SAINT, *Secretary.*
FRANK SPRINGER,
W. A. HAWKINS,
GEORGE CURRY,
Commission.

The legislative assembly, on March 16, passed the law known as the "Land bill," the following section applying to the commission of irrigation:

SEC. 34. For the purpose of facilitating the selection of lands donated to the Territory of New Mexico by the act of Congress hereinbefore referred to for the establishment of permanent water reservoirs for irrigating purposes, and for the improvement of the Rio Grande, and increasing the surface flow of water in the bed of said river, there is hereby created a commission of irrigation, to consist of five members to be appointed by the governor, with the advice of the council, to serve for two years and until their successors are appointed. Such commission shall elect from among their members a president and secretary. The members of said commission shall serve without pay or compensation. It shall be the duty of said commission to investigate and select the most suitable sites for permanent water reservoirs for irrigating purposes and for improvement of the Rio Grande, and also to designate such tracts of public land capable of irrigation from such reservoirs as would in their judgment be advisable to locate for the Territory under said act of Congress, in order to secure the benefit of the enhanced value of the lands resulting from the establishment and construction of such reservoirs, for which purposes they may employ all necessary expert assistants, and to certify the result of such investigation, selection, and designation to the commission and acting under said act of Congress for the selection of the lands donated thereby. Said commission shall also, at least thirty days before the meeting of the legislature, make a report to the governor embracing all available information concerning the best method for improving the Rio Grande and increasing the surface flow of the water in the bed of the said river. Also concerning the subject of irrigation and water supply, the quantity of land in the Territory cultivated by means of irrigation, the extent of present and proposed system of storage reservoirs, the conditions existing in different parts of the Territory with reference to irrigation and water rights, and such other facts as they may deem proper, together with recommendations as to needed legislation on any of such subjects.

The necessary expenses incurred by the commission, to be certified by the secretary thereof and approved by the governor, shall be paid out of the proceeds of the land sold under this act which are credited to the fund for the establishment of permanent water reservoirs for irrigating purposes and the improvement of the Rio Grande: *Provided,* That the expenses provided for in this section shall not exceed fifteen hundred dollars for each year.

Under the foregoing section the commission was duly appointed, consisting of Hon. G. A. Richardson, Hon. Frank Springer, Hon. W. A. Hawkins, Hon. Pedro Sanchez, Hon. Levi A. Hughes.

The organization was perfected by the election of Hon. G. A. Richardson, of Roswell, N. Mex., as president, and Hon. Levi A. Hughes, of Santa Fe, N. Mex., as secretary.

I regard this as one of the most important boards in the Territory, and its work can not help but result in rendering great assistance toward promoting the interests of irrigation in New Mexico, besides the great good and benefits derived by the school lands donated by Congress.

MONEY IN IRRIGATION.

The improved systems of irrigation upon which New Mexico has to depend for the multiplication of her useful land area are developing rapidly, but there are still many opportunities for the investment of capital in irrigation projects which can not fail under good management to make millionaires of the projectors.

There is in operation the Springer system of irrigation, with 50 miles of ditches and five reservoirs, covering 22,000 acres. The Vermejo system of irrigation, which controls 57 miles of ditches and 10 reservoirs, supplies 30,000 acres. In the northwestern portion of the Territory there are 200 miles of ditches, watering 24,000 acres. Here there are several tracts of fertile soil, accessible to streams which will afford an ample water supply, awaiting the attention of moneyed men. Also extensive ditch systems are in operation in the Mimbres region of Grant County.

The irrigation projects noted above are in the four corners of the Territory. In the meantime the great central portions are receiving attention, more than fifty companies having been organized for irrigation projects, and several having plants in operation, affording to the home seeker at the present time ample opportunity for settlement and reclamation.

The valley of the Rio Grande presents the most extensive field for operations of this kind, as the present narrow strip of cultivated land can be widened very materially by a proper disposition of the water which flows so abundantly from the north and is now allowed to be wasted. A few years will find all the water now suffered uselessly to run away utilized to the highest degree and enlarging the area of the agricultural and horticultural land to an extent almost fabulous.

Meanwhile, individual enterprise is increasing the local supplies by the erection of multitudes of windmills, pumping from artesian wells in various parts of the Territory. These prove the existence of great bodies of water underlying a large portion of the Territory. To the settler this means much, and will add in a great measure to the future possibilities of production.

THE NORTHWEST RIVER SECTION.

The San Juan River country, in the northwestern portion of the Territory, offers a splendid opportunity, not only for the production of cereals, but also for vegetables and fruits of all kinds. The vine thrives to perfection. The valleys of the Las Animas, La Plata, and Los Linos, all tributaries to the San Juan, are also capable of rendering large amounts of produce. The valley of the Chama River, especially in its upper part from Chama, on the Denver and Rio Grande Railway, to below Tierra Amarilla, the county seat of Rio

Spillway, Carlsbad Irrigation Reservoir.

Arriba, is one of the finest valleys in the country, and highly productive. And again, the valleys of the tributaries to the Chama, the Brazos, Nutritas, Gallinas, Puerco, El Rito, Ojo Caliente, Bear Creek, and others are all highly susceptible to cultivation. The valley of the Puerco of the East, and the Rio Jemez, with its many tributaries, afford fertile lands, already for centuries under cultivation.

ADVANTAGES OF IRRIGATION.

When the Eastern farmer sees all the work entailed in laying out a wheat field for irrigation and the subsequent labor of applying the water, he is often heard to exclaim, "If all that work is necessary, I have no use for irrigation." It is useless to attempt to disguise the fact that irrigation entails much expense in the cultivation of crops. Of course, that expense varies with the kind of crop raised; but the question may be asked whether the value of the extra quantity produced is not in excess of the extra expenditure.

Let us take the case of alfalfa. The yearly expense per acre for irrigation, as has already been shown, is $2.15; but four crops of hay are raised in the year in lieu of one without irrigation, or say 3½ tons instead of 1½ tons. The farmer therefore gets an extra 2 tons of hay for an expenditure of $2.15 in water. Add $2 for the cost of harvesting these 2 tons, and you have an extra 2 tons of hay, costing $4.15, or $2.08 per ton.

In the case of wheat crop it is not easy to give exact figures, but I have no hesitation in saying that the crop will be double what it is in countries where irrigation is not practiced and where fertilizers are not used. This is due in large part to the fertilizing properties of the river water, to which reference has already been made, which insures the permanent fertility of the soil. One must also bear in mind the fact that wheat and almost all farm products are worth more in the irrigated districts of the West than they are farther east.

No farmer would consider it a waste of money to put 10 tons per acre of barnyard manure upon his land every year, even though it cost him $6. For half this expense he can, where the river water is of the same quality as that which irrigates the Mesilla Valley, not only apply fertilizers equal to the contents of 10 tons of barnyard manure, but he gives the crop the exact amount of water required for a full yield, insures it against loss by drought, and gets a better price than could be obtained elsewhere. Irrigation farming means intensive farming, and it is intensive farms which pay in the long run.

If the question is asked, as it often is, What is the most profitable product to raise in New Mexico? the answer generally made is that apples, peaches, grapes, or some fancy crop will pay the most money, and dazzling figures are given showing the number of pounds per acre and cents per pound, resulting in a rapid fortune from 40 acres of land.

THE CANADIAN RIVER SECTION.

This agricultural district lies between the Raton Mountains on the north and the Pecos River on the southwest. The Canadian flows through it for about 150 miles in a southeasterly direction to near old Fort Bascom, and from there easterly (a little north of the thirty-fifth parallel of north latitude) for about 50 miles. Most of its tributaries flow in from the west. As the western part of this entire section has a slope toward the east with a general descent to the southward, the highest localities are in the northwest corner and the lowest in the southeast, with a falling altitude of from 5,000 to 3,000 feet. Some portions of this river have a fall of 9 feet per mile. Of its tributaries the Little Cimarron and Vermejo creeks afford considerable breadth of arable land, the former having a valley from 25 to 30 miles long and from 1 to 6 miles wide, and the Vermejo one of the same length and about 2 miles wide. Both of these valleys are very fertile, with plenty of water for irrigation. The Rayado Creek has a good valley, but it is subject to overflows. Ocate Creek Valley, formed by erosion, is also very good agricultural land. The Mora River Valley is doubtless the finest in this section. It has a length of from 60 to 70 miles and a breadth of about 4½ miles. Its upper portion, from 8 to 10 miles in length, is about 3 miles wide.

GILA AND COLORADO RIVER SECTION.

This section embraces a belt of land of from 50 to 100 miles wide along the whole of the western line of New Mexico. It is watered by the Rio Puerco of the West and the Zuni River in the north, and by the Gila and its many tributaries and the Rio San Francisco in the south. There are rich and extensive valley lands along the bottoms of these rivers, the most fertile being that of the Rio San Francisco.

NEW MEXICO SOIL.

The soils of New Mexico, as a rule, are quite different from the soils of the Eastern States and possess many advantages not possessed by the latter.

The power of the soils to produce plants depends upon many conditions, among the more important of which may be mentioned a proper control of the moisture, the climate, and the amount of available plant food present.

In regard to moisture control, soils depending on irrigation for their moisture, as do those of New Mexico, have a decided advantage over soils depending solely upon rainfall. While the valleys of New Mexico have an average annual rainfall of probably some 10 or 12 inches, and the greater part of this usually comes in the summer during the growing season, it is still quite insufficient for the needs of ordinary farm crops, which must depend for the greater part of their moisture upon irrigation. The supply of moisture to irrigated soils is under almost absolutely perfect control, provided the water supply is constant. The advantages of such a control of the moisture must be apparent to anyone.

HOW TO OBTAIN TITLE TO PUBLIC LANDS.

The following information is furnished by the register of the United States land office at Santa Fe, N. Mex.:

There are nearly 57,000,000 acres of unappropriated public land in the Territory of New Mexico. Agricultural public land is subject to entry only under the homestead and desert-land laws. The homestead laws of the United States secure to qualified persons the right to settle upon, enter, and acquire title to not exceeding 160 acres of public land by establishing and maintaining residence thereon and improving and cultivating the same for the continuous period of five years. A homestead entryman must be the head of a family or a person who has arrived at the age of 21 years and a citizen of the United States or one who has declared his intention of becoming such, and he must not be the owner of more than 160 acres of land in any State or Territory. A wife who has been divorced from her husband or deserted by him can make homestead entry. Payment of $16 fees and commissions must be paid at the time of entry, and final proof can be made at any time when five years' residence thereon and a cultivation of a portion of the land can be shown. The cost of making final proof, including publication of notice, taking testimony, and commissions, is from $14.25 to $15. A party can, at the time of making homestead entry of 160 acres, enter 160 acres under the desert-land act. He will be required to pay 25 cents per acre at the time of making the entry, after which he is required to expend $3 per acre ($1 per acre each year for three years) in labor or money in improving the land and constructing reservoirs, canals, and ditches for irrigating and reclaiming the tracts entered; and the party may make final entry at any time prior to the expiration of four years on making the required proof of reclamation, of expenditure to the aggregate amount of $3 per acre, and of the cultivation of one-eighth of the land and making a final payment of $1 per acre.

BEET SUGAR IN NEW MEXICO.

The pronounced success in beet-sugar production in the Pecos Valley has occasioned widespread popular interest in the cultivation of sugar beets throughout New Mexico.

During the past three years, from beet seed furnished by the Agricultural Department in Washington, under the direction of the College of Agriculture at Lascruces, the better class of farmers in the Territory have been raising sugar beets with uniform success. The fact is clearly demonstrated that on all the valley lands in New Mexico, with irrigation, may be grown the finest crops of sugar beets of the most satisfactory quality for the manufacture of sugar.

It appears that beets of large size, of small sugar content, may be grown almost anywhere with the ordinary attention given to a crop of corn or potatoes; but special conditions of soil and climate seem to be necessary to produce a crop of beets rich enough in sugar to be profitable for purposes of manufacture of sugar. In determining the presence or absence of these conditions, our Territory has occasion for congratulation in the zeal and good work of the College of Agriculture at Lascruces.

Throughout the Rio Grande Valley, from El Paso to the Colorado line, results appear to be uniformly satisfactory. In the central portion of the Territory, in the high valley region about Santa Fe, the conditions of soil and climate appear to be specially suited to this crop. Here the uniform temperature and almost perpetual sunshine during the growing season seem to develop a larger percentage of sugar in the beet than in almost any other section of the United States in which tests have been made. It appears from tests made at the experimental station last year that Santa Fe grown beets weighing over 10 pounds tested over 12 per cent sugar content, and smaller beets of less than 20 ounces contained more than 20 per cent of sugar.

The yield per acre with irrigation appears to be merely a matter of care and skill in cultivation and in handling the crop under our conditions of climate. The tendency in overirrigation is to produce a large beet of small sugar content. On the other hand, on the prevailing sandy clay soil about Santa Fe from 10 to 12 tons of small beets of large sugar content may be grown with even less water for irrigation than is usually given an average crop of corn. For sugar making the beet most desired should weigh less than 20 ounces and contain more than 15 per cent of sugar; and for the raising of this beet New Mexico has the necessary soil, sunshine, water, and cheap labor to successfully grow in almost any quantity desired. It is not alone in the production of sugar beets of superior quality that New Mexico invites the attention of the sugar-making interest in the country; her railroad facilities for delivering beets at a common point centrally located for the manufacture of sugar in the Territory are all that can be desired. Both at Santa Fe and at Albuquerque may be located sugar factories, convenient to the ample supply of good water, cheap fuel, the best of limestone in unlimited supply for factory use, and reliable local labor. The Rio Grande Valley, and especially in the neighborhood of Santa Fe, has been the home of a native population for many generations accustomed to small truck farming and gardening with irrigation, and are already skilled in the light labor required for the cultivation of the sugar beet.

It is rare indeed that all or so many of the conditions for successful beet-sugar production may be found in the same locality.

Nature has indeed been generous in endowing New Mexico in this particular interest.

CARLSBAD, N. MEX., *July 15, 1899.*

DEAR SIR: Your communication of the 1st instant duly received, and I take pleasure in giving you a concise statement in regard to the beet-sugar industry in our Territory.

The beet-sugar industry was started in the United States in the year 1887, with a production in that year of 30,000 tons of beets. From this small beginning it has rapidly advanced, especially in the last three years, bringing up the production of beets to over 1,000,000 tons, equal to over 100,000 tons of refined sugar, with factories working their full capacity daily for one hundred days during the year, this being a fair average of the length of the campaign of the numerous factories now in operation.

The State of Michigan has experienced the most rapid development, owing to the large State bounty given, and while I do not believe in State bounties, as you will see by the inclosed marked copy of my address upon the beet-sugar industry at the trans-Mississippi congress, recently held at Wichita, Kans., still, if other States do give these bounties, you can readily see the disadvantage it puts our Territory and other Territories and States under, where it seems impossible to get a bounty, and as long as these bounties do exist it will materially retard the development of the industry here, even if the sugar beet grows well and is of a good quality, since investors will always seek the locality offering the best inducements. The quality of the beet raised in any section of our country is not sufficiently superior to counteract the bounties paid by some of our States; hence the rapid development in the districts enjoying the fostering care of State governments. I mention all this as the principal reason why the industry has not grown in our Territory.

THE SUGAR BEET IN NEW MEXICO.

As early as 1891 it was known that sugar beets yielding a very high per cent of saccharine could be grown in New Mexico. In that year a number of samples grown in the Pecos Valley were shipped to the Department of Agriculture in Washington for analysis, and were found to contain an average of 14⅛ per cent of sugar, the richest beets giving 21.85 per cent.

New Mexico belongs to the section of high plateaus which, under proper cultivation, can be made to produce a phenomenally rich beet.

Experiments in sugar-beet growing continued in the Pecos Valley until 1895 with results so satisfactory that in the following year, 1896, the first sugar factory in New Mexico was built in Eddy, now Carlsbad.

The factory is now entering upon its fourth campaign. The past three campaigns have not been the financial success expected, owing to an insufficient supply of beets, due to the scarcity of farmers. The success in raising sugar beets is made in localities where the average acreage per farmer is not over 5. In Lehi, Utah, where the most continuously successful crops have been raised in the United States, the average is only 4. As an example, you can readily understand that 100 farmers cultivating 5 acres each will raise many more tons than five farmers cultivating 100 acres each. The sugar beet is rather a garden crop and requires considerable care to bring about the best results, and a man having only 5 acres is able to give the crop all the attention required, while a man cultivating 100 acres is bound to neglect the proper cultivation and care of it, at least on a large portion of the field. The beet crop repays handsomely the close, careful, and intelligent work put upon it. It is not uncommon to obtain a yield of 20 tons to the acre, although an average of 14 tons is considered exceedingly good.

The advantages of the soil of New Mexico for the growing of the sugar beet on a profitable scale surpass many localities in the United States, and under proper conditions—namely, a sufficient number of good farmers who will not undertake too large an acreage and work wisely—I doubt very much if New Mexico has a superior anywhere, especially where irrigation can be applied. The number of days of clear weather, with good soil and an abundance of irrigating water, together with proper attention, should give a good yield every year, and our climatic conditions will give a richer beet than in the districts located outside of the arid regions, because it is well known that the sugar in the beet does not come from the soil, but from the clear atmosphere, and as we have more bright, sunny days here than, I believe, in any other sugar-beet district, our beets contain and will continue to contain a higher percentage of saccharine matter. Again, the dry fall and winter, together with the absence of hard frosts, allow the beets to remain in the ground until needed by the factory, thus doing away with the expense of siloing, necessary in Northern States.

As stated before, the sugar beet is a profitable crop for the farmer to raise. We pay $4.75 per ton for beets delivered to the factory. The freight charges are 50 cents per ton from any station on the line of our railroad. As most of our beets are delivered by rail, the farmer therefore realizes at least $4.25 per ton f. o. b. cars at his nearest station.

Contracts are made at the beginning of every planting season, thus guaranteeing a cash market to the farmer for his crop, which is in no way affected by the price of sugar or by any speculation. The cost of raising an acre of sugar beets up to harvest time should not exceed $12 per acre. The harvesting of the crop, including loading on the cars or at the company's sheds, should not cost over $1 per ton. A farmer can therefore realize a profit of from $15 to $35 per acre.

Lands in New Mexico are cheaper than in any other sugar-beet district, ranging from $15 to $30 per acre, which should also be an inducement to settlers to locate here.

Again, the season for planting is longer than elsewhere, extending from April 1 to July 1. This is an advantage in case of a mishap to the early planting, as it gives sufficient time for replanting in order to raise a good tonnage before the factory is ready for the beets. Our harvest commences in November. It continues, or would continue with a full crop, until March 1, keeping the farmer busy during the months in which with other crops he is idle and when all other crops are harvested and disposed of.

The capacity of our factory is 200 tons of beets per day, and capable of producing 4,000,000 pounds of white granulated sugar. It is so constructed that it can easily be enlarged when necessary.

A beet-sugar factory is of lasting value to a new and growing community. Our factory during a four months' run pays out in wages about $25,000, to farmers for beets over $85,000, to say nothing of the amounts paid for freight, coal, and other items of expense which put money in circulation.

Trusting that this information will enable you to sufficiently cover the subject of the sugar-beet industry of New Mexico, and offering you any further data desired, I am,

Very respectfully,

Arthur S. Goetz, *Manager.*

Hon. Miguel A. Otero,
Santa Fe, N. Mex.

THE CULTURE OF GRAPES.

Rio Grande Valley is well adapted to the cultivation of grapes. The principal kind now existing is the Mission grape, which was introduced by the Catholic missionaries as early as 1711, and has ever since proved to be the standard variety in this Territory on account of the richness of its flavor and the amount of sugar it contains. It makes an excellent red or white wine, and is equally valuable for the market. From experiments we know also that our Mission grape compares favorably with the French grapes for the manufacture of champagne.

With skill and good management it can not be surpassed. The cultivation of the vine has been practically taught to the natives, and their methods have proved ever since fully successful as to the covering, uncovering, cleaning, and pruning of vines.

There is no doubt that the soil of this Territory is splendidly adapted to the cultivation of the grape. Of late years a number of new varieties of vines have been introduced by various parties and are doing well; nevertheless they require the same methods of cultivation as does the Mission grape.

One acre, or 1,062 vines, will yield each year about 12,744 pounds of grapes, or 910 gallons of wine. This is considered a moderate estimate.

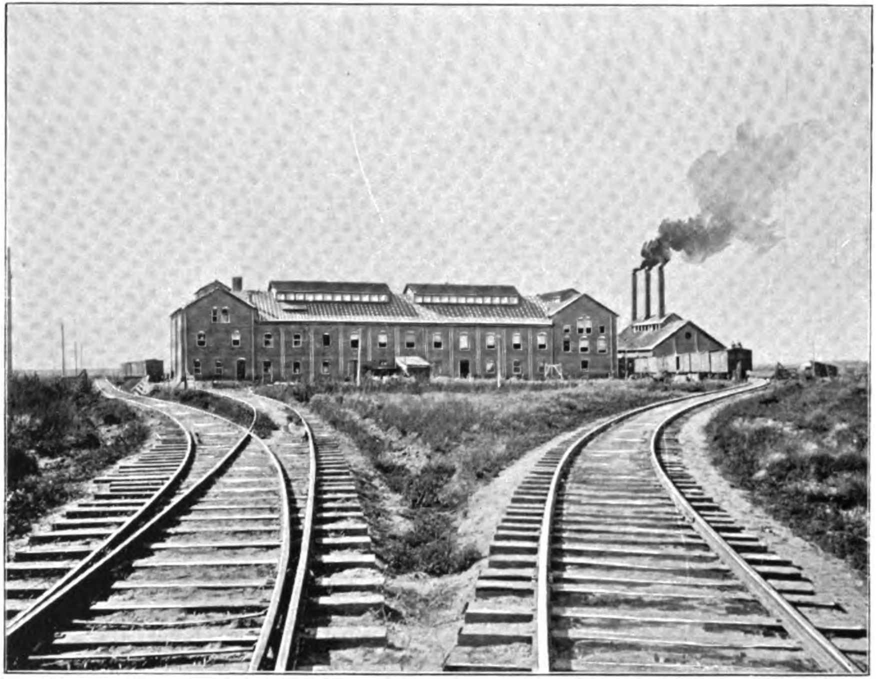
THE CULTIVATION OF THE GRAPE IN THE MESILLA VALLEY.

Among the natives the grape is the principal fruit raised in the valley, although many of the American farmers own good vineyards. The former grow the Mission grape almost exclusively, whereas the latter mostly raise the Muscat of Alexandria, Black Hamburg, Gros Colmar, Malvoisie, and other so-called California varieties, all of which thrive perfectly.

The grapes begin to ripen toward the end of July, and the shipping season usually lasts till about the last week in October. A great deal of wine is made, but it is usually more profitable to sell the fruit for table use. During the season large quantities are shipped, mostly in 10-pound baskets, to all the towns in New Mexico, and to many of the markets of Arizona, Colorado, Texas, Louisiana, etc.

The vineyards are usually started by putting a couple of cuttings during March every 8 feet each way, although many of the older vineyards are set at 6 feet apart. When the cuttings begin to grow, the weaker one is pulled out and the stronger left. The object of setting two cuttings is to make sure of one growing. At 8 feet apart each way 680 vines go to the acre, and this seems a better way or distance than 6 feet apart, as it gives more room for cultivation. Some of the most progressive horticulturists consider that the rows 10 feet apart and the vines 8 feet apart in the row (544 vines to the acre) is still better.

What is known as the "stump" method of training and pruning is followed. This consists in staking the vine during the first two years, so as to form a straight, upright trunk. The first year the vine is allowed to grow as it will, when it is cut back to its strongest eye. The second year all the buds are rubbed off to the height of 15 or 18 inches, and at the next pruning the cane is cut back to 18 or 20 inches, leaving two or three buds as a basis for the future head. From now the "short spur" system of pruning is adopted; that is, the canes



BEET-SUGAR PLANT, CARLSBAD, N. MEX.

are all allowed to grow as they please during the summer, and at the regular pruning in March these canes are cut back to one or two eyes, from which spring the bearing canes. Of course as the vines get old too many spurs are made, and many of them too long, when some of them must be cut out altogether. Under this system most of the grapes seem to thrive very well, although there is a great deal of careless staking and training in the early life of the vines, resulting in difficult pruning later on, and many of the bunches get spoiled by the mud, owing to the want of good, straight, strong trunks to hold up the fruit.

There is considerable difference of opinion as to whether the grapevines need to be hilled up during the winter in this valley. The old custom among the natives has been to cover the vines with hills of earth in the month of November and not to uncover until the following March, when it is time to prune. The mounds of earth are raised sufficiently high to just cover the buds which are to be left for the coming year. No irrigation is given during the winter, or until after pruning.

The object of this hilling up is not to protect the vines so much from the winter cold as from the cold, drying winds, which cause the trunk to crack and the canes to winterkill. It is, however, claimed by those who have tried it in recent years that if the vineyards be irrigated during the winter these dry, cold winds do no harm and the vines thrive better. Pruning is usually done in March, but earlier grapes are produced when the vines are pruned in the fall.

Undoubtedly much better results would be obtained if the vines were wider apart, better trained, and the surface soil kept well pulverized throughout the year. People taking up this industry would be well repaid for the care given their vineyards in the sale of their grapes at good prices—soon becoming independent.

VEGETABLES.

Most every kind of vegetable can be raised in this Territory, except, perhaps, the Irish potato in some localities. The potato is a native of the mountain country in its wild state, and in the central and western parts of Socorro County, along the northern line of Colfax County, and extending southward for 100 miles along the base of the mountains, the finest potatoes in the world are grown. The raising of this crop requires very little work, and the yield is very large. But new upland ground is required, all efforts to produce potatoes on the low, irrigated valley lands having signally failed.

Turnips, carrots, ruta-bagas, and cabbage all do well. Of the latter, it is no uncommon thing to see heads weighing from 20 to 30 pounds, and occasionally one that weighs several pounds more. Cabbages are worth from 1 to 5 cents per pound, depending upon the season of the year when they are sold. Onions excel in size and flavor, and are a good paying crop.

FRUITS.

The fruit industry is coming to the front rapidly, and people coming to this Territory to settle learn that fine fruit can be produced here with much less trouble than in the States. There are many magnificent orchards in this Territory. The size and variety of fruits raised would astonish and delight our Eastern orchardists. A large evaporator has been built at Santa Fe and another at Farmington, San Juan County, has just been completed.

Apples flourish luxuriantly. Pears, quinces, and plums appear to be in their native clime. The strawberry, currant, gooseberry, raspberry, and blackberry all thrive vigorously. The valley along the Rio Grande appears to be particularly adapted to all kinds of fruits, although all sections of New Mexico susceptible of cultivation will produce the finest variety of fruits and most abundantly.

CEREALS.

Wheat, in quality, size, and quantity, is not excelled anywhere in the United States. Corn does well, and oats grow luxuriantly, but are generally cut green and fed in the straw.

TIMBER.

Both hard and soft pine, spruce, oak, cedar, walnut, mountain ash, quaking asp, box elder, cottonwood, etc., are all found in great abundance.

LUMBER INDUSTRY.

Extensive pine forests in New Mexico make the lumber industry here an important one. All over the Territory individuals are erecting sawmills, whose product is demanded and utilized by the people who use lumber for building purposes in the place of the ancient adobe. The profits of lumbering are large.

HORTICULTURE.

The first annual report of the New Mexico Horticultural Society, covering the year 1899, has just been issued. It contains an account of the fruit exhibit held last year in the city of Santa Fe and the efforts of the society to awaken an interest in horticulture and stimulate, by offering suitable prizes, the production of valuable varieties of fruit.

The exhibit referred to was highly successful. It brought together a display which in many respects was remarkable. It showed that New Mexico, in the variety of its fruit products, having regard to quality as well as species, stands in the foremost rank among fruit-producing parts of the United States. Some States may produce certain species of fruit of superior quality to any yet produced in New Mexico, but the same States may fall short in respect of certain other species in which New Mexico may excel; so that it is in the uniformly high grade of its fruits that New Mexico surpasses the other parts of the Union.

Horticulture is a business to which the people of New Mexico may well give great attention. It would be practicable for them to supply large quantities of excellent fruit to the markets of the Mississippi Valley and the lake region. The climate of their Territory will admit of placing the products of their orchards and vineyards in the market at an earlier date than many competitive places, and care and experience in cultivation would in time enable them to produce varieties of a very superior grade.

Practically all the irrigated valleys of the Territory are adapted to fruit growing. The soil of the Rio Grande and Pecos valleys, for instance, is highly fertile, and irrigation has demonstrated its adaptability to both viticulture and horticulture. A good quality of wine could be produced by care in selecting the proper species of grapes. This has already been shown by what has been achieved in that direction. Altogether, the New Mexico Horticultural Society has an excellent opportunity for the accomplishment of a work of enormous value to the Territory.

Our horticultural fair was pronounced by all the most comprehensive and evenly balanced exhibition of fruits of all kinds ever seen, and it has stamped New Mexico as the most perfect fruit-growing section of the world, and while there are many exhibitions on a much larger scale, and some which might excel in some particular fruit, there is none which includes such a splendid showing of fruits of all kinds. There is one very noticeable thing about the fruit of New Mexico, and that is it is entirely free from insects of all kinds, is firm, and of very fine flavor.

During the course of this fair it was visited by those familiar with the American Institute fairs in New York, with State fairs of the East, as well as those of Colorado and California, and all concurred that the fruit excelled anything seen before at similar fairs.

Among the exhibits were 246 entries of apples, 34 of crab apples, 125 of pears; 58 of peaches, 108 of plums, 13 of apricots, 37 of nectarines, 15 of quinces, 36 of grapes, 12 of nuts, etc.

When the premium list was published the criticism was made that the number of varieties of fruits required for the first premiums were so large that no entries of that character could be made. The schedule called for 40 varieties of apples, 40 of pears, 20 of plums, 5 of apricots, 5 of nectarines, etc. The result showed that our horticulturists are raising a much larger variety of fruits than was generally supposed, as in all the above cases the required number was actually exceeded.

Among the notable specimens were the following: Largest apple, weight, 23 ounces; circumference, 15¾ inches. Red Beitigheimer, weight, 18¼ ounces. Gravenstein, 14 ounces and 13⅝ inches. Russet, 13½ ounces and 13½ inches, etc.

Among the pears a Bartlett weighing 18½ ounces, and an Idaho weighing 18 ounces were noticed.

The Agricultural College (of New Mexico) exhibit showed a peach weighing 10¼ ounces, and a Pride of the Rio Grande weighed 10½ ounces.

A bunch of Muscat grapes, grown as far north as Espanola, weighed 25 ounces, though not ripe; and Stanwick nectarines from the same locality reached 5¾ ounces in weight.

No premiums were offered for vegetables and no provision made for their exhibition, but so many excellent specimens were brought in voluntarily that it is evident that arrangements should be made to include them as well as floral displays at subsequent exhibitions.

The horticultural fair which has just closed here was a great success from every point.

MEMBERSHIP AND INCOME OF THE NEW MEXICO HORTICULTURAL SOCIETY, INCORPORATED AS A TERRITORIAL INSTITUTION IN 1886.

The number of life members is 17; of annual members, 166.

As life membership practically cuts off future income, the society has decided to lay aside half of the sum received from life members as a permanent fund for the purchase of land or erection of buildings in the future.

The total receipts of the society during the past year were $712.40.

Life members	$150.00
Annual members	166.00
Admissions	169.45
Subscriptions	67.50
Donations	27.85
Premium, less expense	131.60
Total	712.40

AGRICULTURE—HORTICULTURE.

[George Vestal, agriculturist and horticulturist, New Mexico Agricultural College Experiment Station.]

AGRICULTURE.

Our agriculture is carried on by the aid of irrigation, and when water is plentiful abundant crops are produced. In San Juan, Rio Grande, Pecos Valley, and other parts of the Territory modern farms exist, and when well managed are profitable. When a system of storing flood waters is put in operation immense areas will be put into cultivation. Alfalfa is the principal crop raised, producing three to four cuttings each season, yielding 3 to 5 tons of hay. It is an excellent feed, and most work horses receive no other at any time of the year, and remain in good condition even when continually worked. Wheat is largely raised, principally by the Mexicans. Rye and barley also do well. The experiments carried on with sugar beets at this station and by farmers in different parts of the Territory during the past year conclusively prove that beets of the highest quality can be produced in nearly every section of the Territory. Beets were produced which showed 10 to 22 per cent sucrose, great numbers of the samples running 14 to 17 per cent. The cultivation of the sugar beet is susceptible of a great development. Kaffir corn has proved to be a good crop in this climate and is largely cultivated in some sections. There are many crops not now cultivated which would prove profitable if attention were directed to them. Many sections of New Mexico, by reason of altitude or other conditions, have climates peculiarly their own, which would prove well adapted to some particular crop which would suggest itself to any live farmer. One great advantage the farmer has here over the eastern farmer is the ease by which he can preserve his crops. The dry, pure air retards decay to a great extent, and the absence of heavy dews and rains enables him to harvest and store his crops with but little waste.

HORTICULTURE.

It is in horticulture that New Mexico may expect her greatest development. The soil, when properly cultivated and irrigated, and the climate seem to be peculiarly adapted to the production of fine fruit. The soil is supplied with such essential elements for tree growth as lime, potash, etc., in such abundance as to be practically inexhaustible. These fertilizers form a large part of the expense bill of the fruit grower of the humid region. Our sunny climate produces a large, fine-flavored, high-colored, attractive-looking fruit, which greatly adds to its selling qualities.

The fruit industry of the Territory is still undeveloped. True, fruit growing has been largely carried on in San Juan County, the Rio Grande, and Pecos Valley, and large quantities of fruit have been shipped to near-by and distant markets, successfully competing with fruit from other States; but the large area comprising the small valleys, mesas, and level tracts, when supplied with irrigating waters, will produce such fruits as their climates will mature in larger quantities and to a greater perfection than any other part of the United States.

Vineyard, Valencia County.

VEGETABLES.

Vegetables of all kinds reach their highest development in the parts of the Territory having climates favorable to their growth, and when properly cultivated yield enormously. The quality of our fruits and vegetables will compare favorably with those produced anywhere. The celery of Bernalillo and Chaves counties has gained a wide reputation for its crispness and fine flavor, and is quite largely shipped to adjoining States. The cabbage of northern New Mexico has been known for years to be as fine as can be produced. The tomatoes of the Mesilla Valley, when canned, are superior to any yet brought to this market, and the demand for them is rapidly increasing.

TEN ACRES ENOUGH.

[W. S. Burke.]

WHAT A MAN CAN DO WITH A SMALL TRACT OF LAND UNDER IRRIGATION.

Sweet potatoes of most excellent quality yield abundantly in all the valleys of the central and southern portions of the Territory, and constitute one of the best crops that the farmer can raise, because they enable him to realize a good return for his season's work from a very small tract of land, which is an important consideration to a farmer anywhere, but especially so to one in an irrigation country. The soil and climate of this country seem to be peculiarly adapted to the growth of the sweet potato; the quality of the product is fully equal to that of the famous potatoes of New Jersey, and a fair average crop will give from 900 to 1,000 bushels to the acre with proper cultivation. They never sell for less in the fall than $1 a bushel, and those that are kept into the winter usually bring as much as $2. From this it will be seen that 1 acre cultivated to sweet potatoes in New Mexico will yield the farmer as much money as he can hope to realize in a good year from 80 acres of corn or wheat in Kansas or Nebraska, and since the results are to be measured by dollars and not by acres, it will be apparent to anyone that the irrigation farmer, although he may not be able to cultivate fields as broad as those of his neighbor in the rain belt, has a better prospect of success and a decidedly better chance of a bank account at the end of the year.

The onion is another product that seems to be peculiarly adapted to this section of the country. The large white Spanish onion, which grows to greater perfection in the Southwest than anywhere else in the United States, affords one of the most profitable crops that can be grown in this Territory, and requires irrigation to bring it to perfection. On account of its beautiful silvery color and its peculiar mild flavor, this onion finds ready sale in any part of the country and always brings the highest market price. The yield is about 500 bushels to the acre under proper cultivation, and the price at home ranges from $1 to $2.50 per bushel.

Celery and asparagus are also articles which are especially adapted to the soil and climate of this country, and attain here a degree of excellence rarely found in such articles grown elsewhere.

The New Mexico celery is far superior to that grown in California and is pronounced by all who try it fully equal in all respects to the famous Kalamazoo product, which is noted throughout the country for its superiority.

And when it comes to asparagus New Mexico can fairly claim to "beat the world," for nowhere else on the American continent is there raised asparagus which can at all compare with that grown in the valley of central and southern New Mexico. In many places there are large quantities of saltpeter in the soil (the American settlers call it "alkali," because it comes to the surface after a rain and makes the ground white, causing it to resemble the alkali of the north). This article, which is deleterious to many kinds of vegetables, is the favorite food of asparagus and obviates the necessity of applying salt to the ground, as has been done wherever this vegetable is grown in the Eastern or Middle States. It also causes the plant to attain a degree of excellence and flavor in this country which is unknown elsewhere. During April and May, the months when the cutting is done, the shoots will attain, under favorable conditions, a growth of about 6 inches in a day, every particle of which is edible; there is no woody portion to be thrown away—the whole stock is as soft and tender as green peas, and the flavor is proportionately superior. Sample lots of New Mexico asparagus have been sent to many parts of the country, and the verdict is everywhere the same, "The best I ever saw." It is not only better than that grown in the East, but is so much better that its superiority is noticeable at once even to the casual observer. Actual experience has shown that it will bear shipping to Portland, Me., and that is as far away from New Mexico as you can get in the United States; so the whole country is open to us as a market, and that the article can be sold wherever it is introduced goes without saying. It will sell itself.

An asparagus bed of 1 acre will yield, after the third year, about 200 pounds a day for sixty days, which is as long as it is wise to cut it; this will bring an average of 10 cents a pound during the season. An acre in sweet potatoes will yield 900 bushels, worth $1 a bushel at least as soon as they are dug. An acre of onions will yield 500 bushels, worth never less than $500, and an acre of celery can be relied upon to bring at least $600. A man needs 2 acres in alfalfa and 2 in corn or oats for his horse and cow and 2 acres for house lot, orchard, and kitchen garden. That makes 10 acres in all, which is as much as any man needs to farm for profit, and is fully as much as the most industrious man can cultivate properly. There is an abundance of good land for such purposes to be had in all parts of the Territory. Take, for example, the Rio Grande Valley, the oldest portion of the Territory in point of settlement, a section that has been settled for more than three hundred years, and yet not one-fourth of the available land in this section of the country is under cultivation at the present time. Beginning a little above Bernalillo and going down to a point a little below San Marcial, we have one of the most desirable and fruitful sections of the famous valley and lying right in what may properly be called the agricultural center of New Mexico, a district of about 150 miles in length and with an average width of about 5 miles, embracing 750 sections or 480,000 acres; and yet a careful writer, who has traveled frequently over the district of country in question, says: "If we concede that one-tenth of the land is now under cultivation we are making a very liberal estimate." But if we should almost double this very liberal estimate we should still have in the district referred to about 400,000 acres of unused land—enough to furnish homes and profitable employment to 400,000 families, or more than the entire present population of the Territory. And there is no waste land in this district named; it is all arable and all tillable and needs only the application of water to make it as productive as the best land in any part of the world. The Rio Grande carries water enough for the cultivation of the whole of this tract without encroaching in the least upon the rights of those who live farther down the river. True, there would not be water enough under the system of irrigation at present in use—a system that was adopted three hundred years ago, when economy in the use of water was something wholly unknown and totally unnecessary, and under which the water wasted is at least five times as much in quantity as the water used—but it is not to be supposed that this system will continue many years longer. Modern systems of irrigation are being introduced in all other sections of the country where farming is done by irrigation. New Mexico will not remain long behind the times. The system practiced in California and Colorado, and in the Pecos Valley in our own Territory, which puts the water upon the cultivated fields and not upon the waste places and the wagon roads, will soon be adopted in this section, and then, as we have said, the Rio Grande will furnish water enough to irrigate all the lands in its valley and will support more people than are now in the whole Territory.

A country like New Mexico, where all kinds of fruit and vegetables can be grown to such perfection and in such profusion, is the place for canning factories, and it is safe to say that there is hardly a settlement in the Territory in which there is not at the present time a good opening for an establishment of this kind. The genial climate, the long seasons, the almost perpetual sunshine, and the rich soil, which is further enriched at every irrigation by the valuable sediment which is brought down from the mountains, all combine to produce conditions which are not surpassed in any part of the world for the successful growing of garden vegetables, and the yield of these is so enormous that it would hardly be believed by any one who does not possess a practical knowledge of the subject. There is a reliable home demand for all such products, and everything of that sort that can be grown here will be needed to supply the wants of our own people; but there are comparatively only a few vegetables that can be kept for winter use without preserving or canning. It is a well-known fact that the people who live in the cattle and sheep camps and the mining camps and villages of the West are the largest consumers of canned goods in the world; many of them practically live out of tin cans. The area of country in the Southwest that can be used for mining and grazing purposes is so much greater than the area that can be cultivated, and such a great number of people must always find employment in those occupations, that all the vegetable products of the country will always find a ready market at home. But, as is well known, it is necessary for the greater part of these products to be canned in order to be utilized. At present we are not producing one-fourth of the vegetables we consume for want of proper facilities for preparing them for market, and while we are able to produce more and better vegetables than any other section of the United States, our people are fed mainly upon the inferior products of other sections. If this condition of things had to be permanent it would be rather discouraging; but it will not continue very much longer; the good openings that are presented in all parts of the Territory for the establishment of canning factories will soon be taken advantage of by men who are looking for good business opportunities. The only reason why such industries have not already been established in all sections of the Territory is the fact that our present careless and haphazard system of irrigation renders the supply uncertain; but given a reliable modern system, such as will soon be introduced in every section where there are intelligent, progressive people, and it will be but a little while before we have canning factories enough established in the Territory to take care of all the vegetables we can raise, and the large sums that we now send abroad every year to pay for stuff that we buy from other sections will be kept at home for the benefit of our own people.

With respect to canned good, woolen goods, and all other articles which can be manufactured successfully here, we will not only have the advantage of a market at home for all we can produce, but the Territory is so far away from any other manufacturing center that the cost of transportation on goods shipped in from abroad is great enough to give the home manufacturer a good "protective tariff" which no Congress can repeal.

CANAIGRE.

An industry that is exclusively adapted to the arid Southwest, and especially adapted to New Mexico, is the production of the canaigre plant.

The following extract from Bulletin No. 21 of the Arizona Experiment Station will give the information asked by many as to whether canaigre may be grown in their respective localities:

> The best conditions for the growth of canaigre are a cool but not freezing climate, a moderate amount of moisture, sandy, fertile soil, and probably also a sunny and arid atmosphere. These conditions are nowhere combined more perfectly or for a longer period of the year than during the six or seven cooler months in the arid Southwest. * * * A mean temperature of about 70° or less is required for the growth of canaigre. Above this, even though there be abundant rain, as was the case in August, the roots will not do more than sprout feebly, and various attempts to make them grow in warm weather have failed. This seems to limit canaigre to the Southwest, for nowhere else, excepting possibly in some of the Southern States, is there so long a period of mild weather. It has been grown experimentally in Florida with some success, but in the Northern States the interval between the servere cold of winter and the extreme heat of summer is too short to allow of much root development. The sprouting of the roots in August, under the influence of rain, suggests that, in the culture of canaigre, one or two summers would prepare the plant to grow more promptly on the advent of cool weather.
>
> The growing plant will stand a good deal of cold. When frosted the leaves lie prostrate on the ground, but immediately regain position when thawed out by the sun. The root also will endure freezing. It has been left in the ground all winter 60 miles north of New York City, subjected to a temperature as low as 15° below zero, without injury. At Lincoln, Nebr., the roots stood a very severe winter without any damage whatever. At Peoria, Ill., plantings made in 1892 were still alive in 1895, and similar results are noted at Washington, D. C., and Garden City, Kans. The new root development, however, is stated in a number of cases to be insignificant under such conditions.
>
> As to locality, canaigre is found more commonly in sandy washes where water is more abundant. With irrigation it will make a good growth in any fertile, tillable ground, but the influence of soil conditions on actual production has been little studied. It seems to stand considerable alkali, and is even reported in the salt-grass meadows of Tia Juana Valley, near San Diego, Cal.
>
> The tanning materials in canaigre remain pretty constant throughout the growing season, with, however, a small but distinct increase after the plants become established in vigorous growth. The amount of this increase in mature roots from year to year was further shown by taking four samples of wild roots, comprising every age up to about 5 years, dividing the samples as nearly as possible into successive years' growth and analyzing. It was found that the average increase of tanning materials from year to year, in ten instances, was 1.64 per cent in water-free material. In one set of cultivated samples the averages of the first and second years' roots differed 2.64 per cent. This indicates a small but constant increase in the per cent of tanning materials from year to year, but holds true only so long as the roots retain their

vitality. When they die the tanning substances quickly disappear. Although the percentage does not increase remarkably from year to year, the roots themselves become larger, so that the actual amount of tanning materials is much greater.

A factory for extracting tannin from canaigre is located at Deming, 230 miles from Albuquerque and directly tributary to El Paso; but arrangements are made to start a tannin factory at San Antonio, N. Mex. Parties interested have been very busy in San Antonio for the past several weeks taking options on land, selecting a site for the factory, and perfecting other arrangements attendant upon immediate construction.

The factory at Deming has been depending upon its supply of canaigre from the wild root, which grows in the greatest abundance in southern New Mexico, and is gathered by the natives and shipped. Now, however, it is proposed to cultivate the plant, and already options have been secured on 3,000 acres in the immediate vicinity of San Antonio, with 2,000 acres more to follow, thus making 5,000 acres altogether. This immense tract of land will be placed under a complete system of irrigation, for, although the canaigre plant grows wild in the most arid regions, it takes five years to assume mature growth, while under irrigation a good crop can be produced annually. Canaigre grows only six months in the year and, strange to say, this is during the winter season from October to April. This plant has been used by the Mexicans for centuries in tanning their leather, but always in a dry form. Now, however, there has been discovered a process by which the acid can be extracted from the green root, so that a new supply can be taken from the fields every day and converted into tannic acid, thus making the root worth from $80 to $90 per ton in any market.

San Antonio was selected as the most suitable place on account of its irrigating facilities and its rich coal fields. The coal mines of the Hilton Mercantile Company lie not very far distant and the fuel can be had at a very nominal rate. The factory will employ 50 or 60 men, while the cultivation of the plant will give work to an additional force of 250 men. The capitalists who are interested, it is said, will spend a quarter of a million of dollars before they get the factory in running order. This will undoubtedly make it one of the most important enterprises in the Territory, and will mean a great era of prosperity for the San Antonio Valley.

THE CANAIGRE PLANT.

Canaigre is one of the richest producers of tannic acid known to the chemists and tanners. In tanning leather it is absolutely essential to have great vats full of the acid, in which hides soak until rid of much of the animal matter and are rendered pliable. Canaigre is found wild in the greatest abundance in almost every part of New Mexico.

Through deforestization, the former great sources of supply of tannic acid, oak, hemlock, beach, and sumac, have been greatly diminished. Canaigre has been declared by experts to be a better tannic-acid producer than hemlock bark.

To Mr. Francis E. Lester, registrar of the New Mexico College of Agriculture at Las Cruces, I am indebted for the following description of this valuable plant and its uses:

Canaigre (*Rumex hymenosepalus*) is a native plant found wild in the region known to botanists as the Lower Sonora life zone. It is most at home in a sandy soil, and in the lower plains and river valleys. Its name is a corruption of Spanish "cana agria" (sour cane), otherwise known as wild dock, wild rhubarb, etc. Its roots are like those of the dahlia or of the sweet-potato, being tuberous. They vary in size from the fraction of an ounce to more than two pounds in weight, and grow in clusters which increase in number and size every year, growing darker and harder as they grow older. A plant grown from seed will produce a root from 1 to 4 ounces in weight the first season, and this root will produce from two to a dozen other roots during the next season. The life of the plant is about five or six years. Wild plants are found yielding as many as eighty to one hundred roots, weighing 8 or 9 pounds. In cultivation the plant has been satisfactorily propagated by cutting the tubers, or by detaching the shoots, in the same way that the sweet-potato is propagated.

The plant makes its growth during the winter season, between September and May, blooming in March and April, and dying down in May. It will stand a good deal of cold, one plant having stood 15° below zero in New York State.

Experiments show that the per cent of tannic acid in the roots runs from 25 to over 30 per cent. The effect of cultivation appears more in increased size and number of the roots than in increased percentage of tannic acid.

When shipped green the roots were found to ferment on the way, but shipped in a dried and sliced condition they meet with a favorable reception. By drying and slicing, a ton of canaigre chips is produced from 3 tons of green roots. In 1891 over 1,000 carloads were shipped to European points. The prices ranged from $55 to $65, delivered.

Experiments, for the purpose of obtaining a more concentrated form of canaigre product, resulted in 1892 in producing a satisfactory canaigre extract, and a factory was erected at Deming to produce the extract. The product is a semisolid extract, having a standard purity of 48 per cent of tannic acid. One ton of this extract is obtained from 4.83 tons of green roots. The entire output of the factory was sold at prices averaging 5 cents a pound delivered.

S. P. Curtis, the juror of tanning materials of the World's Fair, says: "I am of the opinion that canaigre contains a large quantity of tannic acid, with less injurious substances than any other known tannic material in use. Leather tanned with this material is much stronger, more durable and flexible, and is affected less by heat and moisture than that tanned by any other material. It reduces the time of tanning to at least one-half that required by other materials used in modern tanning, and it contains a filling property not found in any other tanning material."

These favorable comments are practically repeated by experts in other countries. With the rapid destruction of the oak and hemlock, tanners will have to look elsewhere for a tanning product.

Twenty to forty years are required to grow a fair-sized tree, while in two years as much tannic acid as would be contained in the tree may be produced from canaigre on a few yards of land. A ton of hemlock bark furnishes about the same quantity of tannin as a ton of canaigre roots, but the former costs more than twice as much as the latter. Moreover, the cost of working the hemlock bark into extract is greater than that of working the canaigre chips.

Canaigre is a certain crop. It responds readily to cultivation by an increased yield. It is easily planted. About 900 pounds of young, 1-ounce roots, set at intervals of 1 foot in rows 3 feet apart, is sufficient for one acre. It is a winter crop, and is irrigated when water is little used for other irrigation purposes. The roots may be left in the ground for an indefinite time before harvesting.

The cost of growing an acre of canaigre is not more than $16.50. The roots will yield from 12 to 20 tons per acre. The crop may be irrigated four to six times, the land being cultivated after each irrigation in order to loosen up the soil. Planting should be done before October 1, and harvesting between June and September.

Analysis shows that the waste product left after extraction is as valuable for fuel as mesquite wood. When well rotted, it is also valuable as a fertilizer.

It is said that the available supply of native roots near railroad shipping points has been exhausted, and the industry must in future depend upon the cultivated product.

In this territory, where, as every resident knows, the wild tuber grows luxuriantly all around, some test crops of this plant ought to be made.

It was said, long ago, that the manager of the plant at Deming declared that San Juan County was the best country for the growth of canaigre he had seen. Only the lack of railroad connection prevented that plant being located there. But at the prices mentioned it ought to pay to ship, dried and sliced.

CELERY PRODUCTION.

A product in which the Pecos Valley is gaining special distinction is its celery. It is an industry which is developing rapidly, constantly acquiring new markets. The most extensive production of this delicacy is near Roswell, on the Spring Brook celery farm. The farm is watered by a great spring bubbling from mother earth, which, combined with the continual sunshine peculiar to the Pecos Valley and the saline nature of the soil, makes a combination for growing a high grade of celery not possessed by any other country. The constant sunshine, which blushes the apple, crimsons the cherry, ripens the golden grain, colors the flowers, and flavors the fruits with the choicest essence of nature's brewing, is no less potent in storing up those essential qualities in celery that raise it to a standard excellence, surpassed by none, equaled by few, and may be well said to bear the same relation to the celery trade as gold to the monetary system. The celery raised in the Pecos Valley is pronounced by those qualified to judge superior to that raised anywhere else in the United States, and the fact that it leads all competitors in every market it has reached would seem to verify the assertion, particularly when it is known that it came in competition with the product of the most famous celery farms in the whole country. The soil of the valley seems to possess to a marked degree the constituents which impart to this table delicacy the peculiar nutty flavor so much sought after by epicures. The Spring Brook farm has proven a full success, both in the production of the vegetable and in marketing it to financial advantage. The Roswell Register notes this fact in a recent paragraph, which says:

> W. M. Farmer has just received returns from his last shipment of celery. The total figures show that, in addition to supplying the local demand, he shipped out 88,815 pounds. The express bill on this was $1,389.80. The gross income realized at the farm for the crop of 20 acres was over $6,000.

The planting on this farm has been increased to 25 acres this season, while all over the valley farmers are putting in beds of greater or less extent.

FANCY TOBACCO SEED TO BE DISTRIBUTED AMONG NEW MEXICAN FARMERS BY THE COMMERCIAL CLUB OF ALBUQUERQUE.

The following letters relative to the culture of tobacco have been received by the Commercial Club of Albuquerque, and the seed mentioned is now at the club rooms awaiting distribution. The seed will be issued in small quantities to all farmers who wish to raise tobacco and who will agree to give the intelligent care and attention necessary to insure successful cultivation. The letters are self-explanatory:

CHICAGO, ILL.

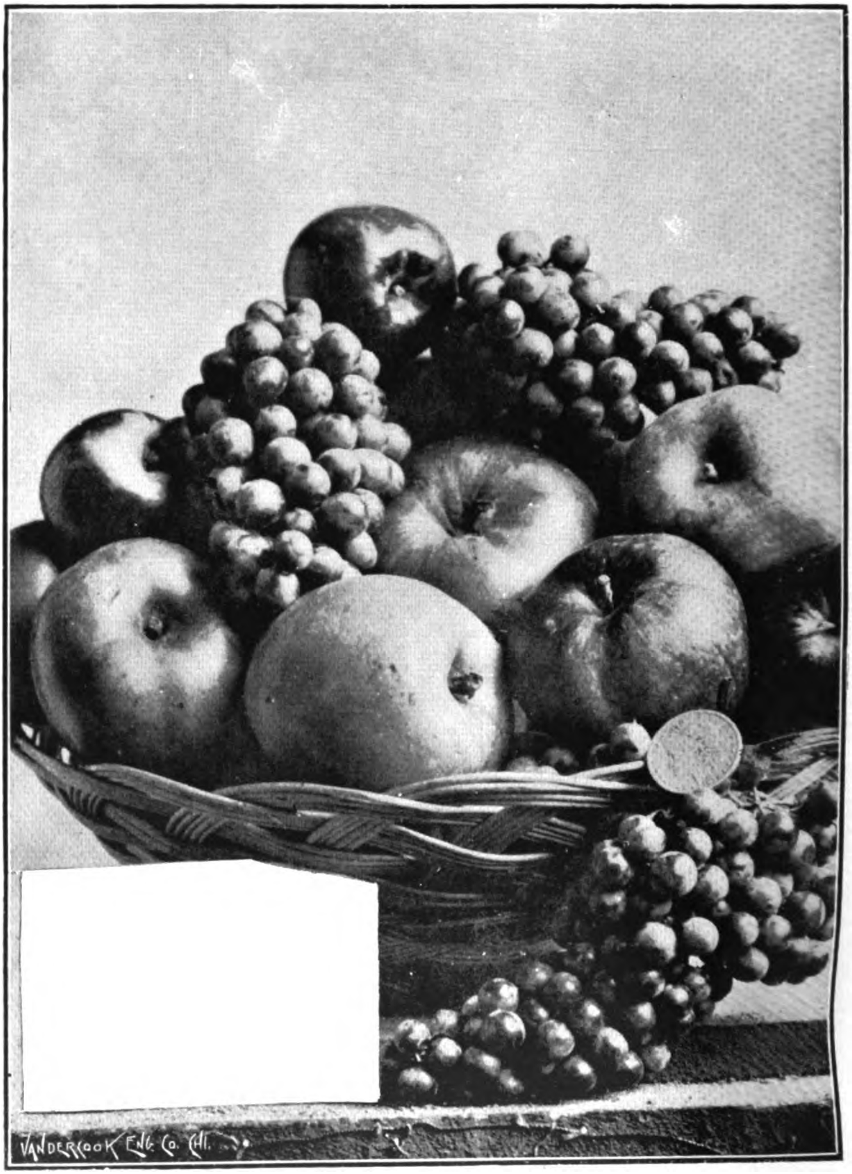
COMMERCIAL CLUB, *Albuquerque, N. Mex.*

GENTLEMEN: Not long ago Mr. Chambers, general freight agent, sent me a sample of the tobacco raised in the vicinity of Albuquerque, which I sent to an expert grower in Virginia, who reports on same as follows:

"The tobacco you sent to me has an excellent flavor, but owing to the fact that it was cut before being thoroughly ripe it cured up green. In as dry a climate as New Mexico, with the proper kind of seed to begin with, tobacco ought to cure a splendid bright red color without using any fire at all. But in order to get the right color and flavor, two things are necessary—the right kind of seed, and allowing the plant to become thoroughly ripe.

"In New Mexico the plant bed should be made in February, and should be from 20 to 50 yards square, according to the size of the crop contemplated, and should be irrigated. The plant bed should be gotten in thorough order and the seed should be sown in it by the 1st of March.

"The plant should be ready to set out in June, and, if the ground is in good order, one rain or one irrigation will make the crop. Tobacco requires less water than any



BASKET OF SANTA FE COUNTY FRUIT.

other plant I know of. The great trouble with us is that we have too much rain, which makes it cabbage or bunch up. If we could have moisture just when we wanted it, and not too much, and such soil as you have in the West, we would make the finest tobacco in the world.

"Hoping to hear from you soon, I remain, your friend,

"W. G. PILKINGTON."

Comment is unnecessary. Tobacco is one of the most important and most profitable of crops. On the strength of the opinion above given, by one qualified by long experience as a grower and manufacturer to speak knowingly, I would warmly advocate your body's taking up the matter of careful experimentation in tobacco culture, with a view to its becoming established on a sound basis as one of New Mexico's products. I will be glad to render any assistance in my power to that end. I have written for information as to the best seed to use.

Very respectfully,

JAMES A. DAVIS,
Industrial Commissioner, A., T. and S. F. Rwy. Co., Chicago, Ill.

ALFALFA HAY.

The remarkable development in the West of the species of hay known as alfalfa, within the past few years, can not fail to interest the farmer immigrant. Special attention is now given here to the cultivation of that crop, and it has proved a great success. It is a plant of wonderful power of growth. As a rule, three cuttings a season are made in the North and five in the South, which will average for the season one and a half tons per acre to each cutting.

It is a species of lucern, a perennial, an enormously prolific grower, containing a very high percentage of nutritive matter, and is of such a hardy, aggressive character that once it is firmly rooted it requires little attention other than an occasional irrigation and harvesting of the heavy crop of hay which it produces. It is the fodder plant of this region and the one factor that will permit stock raising and fattening to be successfully carried on upon modern scientific principles in what has heretofore been known as the "arid region."

Formerly, from the want of some cheap fattening food, the far West was entirely dependent upon the agricultural States for its fattened beef. Cattle were shipped from New Mexico to Kansas or Missouri, fed there on corn, and then sent back as beef in refrigerator cars, to be eaten, perhaps, close to the place in New Mexico from which a few months previously the thin ox had been shipped, thus necessitating a double journey of 600 to 1,000 miles and an additional expense of 4 to 6 cents per pound for carriage alone. To-day a good percentage of the beef eaten in New Mexico is fattened here on alfalfa, and in the future, as more land is placed under irrigation, the proportion will be largely increased, for the profits are necessarily large, the cost of the double journey of the corn-fed beef being so greatly in favor of the New Mexico farmer.

Another, and perhaps a greater, revolution is being brought about by alfalfa, enabling New Mexico farmers to breed high-grade and thoroughbred bulls. Formerly ranchmen were obliged to go to the Middle States for the large number of high-class bulls they required for the improvement of their herds. The acclimatization of these upon the Western plains was accomplished by enormous loss, chiefly owing to the great difference in climate and pasture. To-day, with the aid of alfalfa, breeding such cattle is fast becoming an important industry in New Mexico. The climate here being the same and the grass similar to that upon the great cattle ranges, the mortality during acclimatization is slight, and cattlemen willingly give a higher price for a New Mexico than for an Eastern bred bull.

Another important consideration to the advantage of this grass is that as cattle can largely depend upon the nutritious native grasses during the winter, the New Mexico farmer has three great factors in his favor: First, a higher value for what he raises; second, less cost of production; and third, a practically unlimited market at his door, with no heavy freight charges to pay when shipping to the buyer—a combination of advantages that must soon drive his Eastern competitor out of the market, and leave alone in his hands a large and profitable business.

For all these reasons there will, for a long time to come, be an immense demand for alfalfa for cattle-raising purposes.

The same conditions apply to hog raising, and with equal force. It will doubtless sound strangely to the Eastern farmer to be told that hogs are here fattened for the market on alfalfa hay, but it is nevertheless true, and the meat thus produced is fully equal to, if not better than, corn-fattened pork. It seems to be as good for hogs as for cattle. It is becoming the rule here, and such hogs command high prices, as "hog cholera" is not known in these mesa regions.

Alfalfa is a perennial plant, and when once sown will last for many years. It is difficult to say how long it is profitable to keep the same field in alfalfa, but there are many instances of land that has borne crops of alfalfa for twenty years, and even for a longer period, without showing any signs of depreciation.

The seed is usually sown in February, on land already seeded to wheat, and oats are also frequently sown with the alfalfa in order to act as a shade to the young plants. But quite as good results have been obtained by sowing the alfalfa alone. The seed may also be put in the ground at the end of September. The young plants will soon appear above the ground and will continue to grow, in roots if not in leaf, during the greater part of the winter.

The cost of seeding an acre of land with alfalfa, from an estimate made in the Mesilla Valley, is as follows:

Plowing and harrowing	$5.00
Drilling seed	1.25
Making borders for irrigation	2.50
Twenty-five pounds of seed, at 8 cents	2.00
Total	10.75

The annual expense will be:

Cutting, raking, gathering, and stacking 3½ tons, at $1	$3.50
Irrigating six times, at 15 cents	.90
Water per acre	.75
Cleaning lateral ditches	.50
Baling 3½ tons, at $1.35	4.72
Hauling to railroad 3½ tons	3.50
Total	13.87

This makes the cost of the hay in the stack $1.60 per ton and not quite $4 baled and delivered on cars. Hitherto most of the alfalfa has been sold as hay, but much better returns are obtained by feeding it to live stock, for raising hogs, and dairy produce, which undoubtedly constitute the best products of the farmer. Alfalfa usually gives four cuttings in the year, but with care and plenty of water it would be possible to get five cuttings, yielding altogether five or six tons of hay. Owing, however, to a somewhat slovenly method of farming and the occasional lack of water, the writer places the average yield in the valleys at 3½ tons per acre.

MAKES GOOD PORK.

Wherever alfalfa can be raised the best as well as the cheapest pork and bacon can be produced, for alfalfa gives growth to the muscle, making the lean meat that is the best and sells the best. And while growing in the alfalfa fields the hogs get the exercise needed for healthy development. Wherever it will grow it may be made a highly profitable crop, and one that will get out of the swine industry its biggest possible results.

SOME GOOD THINGS ABOUT ALFALFA.

Alfalfa benefits lands for cultivation by opening up channels through compact substrata to a considerable depth, allowing the entrance of water and air. The roots have penetrated the most compact soil, and their power to enter through clay and hard streaks is great enough to make them excellent subsoilers. The soil of a field which has been planted to alfalfa has practically been deepened for subsequent sowing in wheat. We do not know of any observations having been made upon the root development of wheat in prairie soils, nor as to the depth to which they penetrate in the virgin soil, where there is a very fine, compact, and tough substratum, the result of settling and compacting of ages.

To plant such soil to alfalfa is to perforate this compact subsoil with numerous channels for the passage of water and air and for the entrance of other roots when those of alfalfa have rotted. The work done by alfalfa roots in accomplishing this is very great, but this work is to benefit the soil, to the advantage of the succeeding crops and to the profit of the owner, being the cheapest labor as well as the best directed and most efficient of any which he can employ. The great benefit accruing to worn-out wheat fields by being sown to alfalfa is a matter assumed to be a fundamental fact of New Mexico farming.

At average prices alfalfa hay does not bear transportation, except it can be converted into some more marketable form; and this has been the case for years. Until recently the fattening of steers was profitable, and consequently a favorite manner of marketing alfalfa hay. The hay was fed in the field, the animals pasturing and feeding on the ground upon which the crops grew; this was practically equal to returning the crop to the soil from which it was taken. Of course, the practice is not without some drawbacks; still the crowns were not trampled to death and the voidings of the animals were equivalent to manuring the surface soil with the crop grown upon it. There is no question that this is not an economical way of treating the manure; but, in spite of the losses, a large amount of the manurial elements of the crop were returned to the soil.

This does not hold for sheep feeding, and unless farmers pay more attention to the manure of the sheepfold, some of the beneficent effects of alfalfa growing observed in the past will be wanting in the future. The care of this manure is an important question to the people of this country. Alfalfa is a heavy feeder and lays a tax upon the soil for every benefit it bestows. The apparently wasteful methods of the past have tended to gain all the advantages from growing this plant and to obviate any disadvantages. If the same good results are to be maintained under a changing system of feeding, care must be exercised, and the manurial equivalent of the crop must be returned to the soil.—[Field and Farm.]

PROFIT IN ALFALFA.

[Carlsbad Argus.]

Alfalfa (lucern or Spanish clover) is the most extensive and lucrative crop grown in the West. This remarkable plant is one of the most valuable of nature's products. Once successfully planted there is no termination to its wealth-producing life. Its characteristics are as follows: The roots penetrate to the lower stratum of the soil and put it in excellent physical condition for corn, wheat, and any succeeding crop, potatoes especially, besides acting the part of a fertilizer, similar to red clover as used by all farmers in the East. The corn, wheat, and potato crops are almost doubled. It is easy to raise and secure a fine stand of plants if the soil be put in proper condition.

Its staying qualities are good, as the oldest fields show no diminution of yield; neither does it die by winter exposure. The quantity produced by the many cuttings makes it much more valuable than other clovers or grasses. It is as digestible as clover hay, taking constituent by constituent. Its chemical composition shows that it is a rich, strong food when properly cured. Its feeding qualities are excellent, being relished by all farm animals. It is also strong food when properly cured. Its healthfulness as a steady diet for work horses and mules is another of its strong points. The long life of work animals has no parallel in clover or timothy regions.

There are two methods of growing alfalfa: One is to irrigate freely and cut exclusively for hay, whereby four and sometimes five cuttings are harvested in a season, the total product being an average of about 5 tons an acre, worth from $5 to $7 a ton in the stack. Owing to the heavy yield of hay the total cost of producing and putting it in the stack does not exceed $1.25 a ton, leaving a net income of from $10 to $25 an acre. The other method of growing alfalfa is to cut one crop for hay and one crop for seed. The yield of the hay crop in this instance will average 1½ tons an acre. The average yield of the seed crop is 5 bushels an acre. The largest yields of seed have been from fields which have been pastured during the spring months.

The seed is worth from $3 to $7 a bushel of 60 pounds. The total cost of producing alfalfa seed including harvesting, thrashing, and cleaning does not exceed $1.50 a bushel. In addition to the crop of hay and seed, the alfalfa straw and pasture remaining always sell at $2 an acre, net, making a total net annual income of from $10 to $20 an acre. When a stand of alfalfa is acquired it will last a lifetime; but where it has been produced a number of years it is frequently plowed under as a fertilizer, and lands so treated yield enormous crops of all kinds. In the irrigated districts of both Europe and America the demand for alfalfa seed is constantly increasing for reseeding land exclusively for its fertilizing qualities.

RANGE GRASSES.

There are about thirteen or fourteen different plants indigenous to New Mexico that, curing on the stalk, without cutting or labor of man, comprise the great bulk of the valuable fattening food for range stock. A short description of each is given below.

The majority of the native, uncultivated forage plants of New Mexico are grasses, and the others, such as sotol and prickly pear, impress one as rather queer stock foods. The grasses of this class belong to two different groups—those which grow in the moist and alkaline soils of the valleys and those which are found on the mesas, and whose only supply of moisture is the little rain that falls during the year. Where irrigation is possible the best of all forage plants—alfalfa—can be raised in such great abundance that the cultivation of few other hay or fodder crops is attempted.

Hilaria mutica (Galleta grass).—This grass is found principally upon the high planes on both slopes of the Rocky Mountains. It is also known in localities as "black grama;" is a perennial grass, spreading by means of thick, scaly, underground stems, the roots of which are very nutritious, and stock seem to relish them.

Paspalum distichum (joint grass).—This grass is also known as "knot grass" in some localities. It is adapted to warm, moist soils of alkaline tendency, and in New Mexico is most abundant on lowlands that are flooded occasionally, and upon the ditch banks late in the season. It is cut by the natives, to be fed green to stock before corn has matured. This grass is said to have some medicinal qualities.

Eriochloa punctata (Hamil).—Irrigated but uncultivated fields usually produce an abundant crop of the above-named grass each season. After the corn is "laid by," or during what little rain we have in the summer, this grass appears in the cornfields, along the ditch banks and the fence rows, and makes very rapid growth during the hot days of August and September. It produces an abundance of seed, and will reseed the ground each year. Land once seeded with it would produce a crop of fair hay after a crop of wheat has been taken off, and, so far as judged from an analysis, should be a valuable forage plant.

Panicum crus-galli (barnyard grass).—This rapidly growing annual is widely naturalized over the western and southern parts of the United States. As is indicated by its great geographical range, it has great powers of adaptation to climatic condition and is very variable, two well-marked varieties being recognized. It varies in height from a few inches to 5 feet and over, but the usual height is 3 feet. The natives cut this grass and feed it to their stock while green, before the corn matures. There is a difference of opinion as to the value of this grass as a hay crop. Some think it very valuable, while others think it worthless. It would be excellent to feed with alfalfa, and the two properly mixed would make a first-class combination.

Panicum obtusum (grapevine mesquite).—This is one of the native Southwestern grasses, found generally in the rich, loamy bottoms of the river courses, very rarely appearing on the mesas. It is a perennial which spreads rapidly, grows about a foot high, and produces a rather strict panicle of flowers. Stock seems to relish it. It does not grow tall enough to cut for hay, but would make a very fine pasture grass if supplied with water; its habits of growth and its great vitality would tend to prevent its being tramped out by stock.

Muhlenbergia texana (Texas drop-seed grass).—This is a perennial, growing upon the mesas and the dry, rocky hillsides. It is sometimes known as the "grama grass," and is probably as valuable as any of the true grama grasses; it is also called "mesquite grass." This plant rarely exceeds a foot in height, but it is a grass that is much relished by stock on the range. Occasionally, when the summer rains have been heavy, it is cut, cured, and baled along with the grama grasses and others, and makes a very valuable hay.

Lycurus phalaroides.—This is a common grass, and is usually found on the rocky ridges and hills of the plains, and not rarely in the mountains. It has been collected at an altitude in New Mexico of over 6,000 feet above sea level. It grows in bunches under the most favorable conditions to a height of 18 inches. It would only be valuable for stock when fed with something containing much protein and fat.

Sporobolus airoides (bunch grass).—This is one of the commonest of all the native grasses in the western United States, and is found in all arid portions of the Rocky Mountain region from Montana to Texas and west to California. It is perennial, forming dense tussocks on flat, dry, alkaline plains. While it is of no value as hay, it is considered a good pasture grass in some sections, and it certainly is of great value upon those alkaline "flats," which will support few other kinds of vegetation, since it flourishes in such localities, and stock relish it.

Dr. Rothrock says that this grass and another closely related species (*S. cryptandrus*) furnish a fiber which might be utilized in making paper or cordage.

Bouteloua oligostachya (blue grama).—This is the common grama, and is also known as "mesquite grass," and is frequently mistaken for the "buffalo grass" (*Buchloe dactyloides*), with which it at one time formed the bulk of the pasturage upon the Western plains and ranges. With the increased number of animals upon the ranges these grasses are being somewhat killed out, since they are very rarely allowed to seed, and thus few new plants are produced each season. It is a perennial, growing in small, dense clumps. It is not considered a very good grass for hay, but it is frequently cut and cured when standing with other grasses; but as a pasture grass it is probably the best of all native grasses. It is not easily tramped out and requires only a small amount of water. It grows rapidly and cures standing, and stock prefer it to almost any other rough food, even when dry.

Bouteloua polystachya (six-weeks grama).—This is a common name applied to two species of the genus Bouteloua, which are quite common and similar in character, and the two usually appear together. Both are annuals, and spring up in the open mesa just after the summer rains, and grow very rapidly, maturing in about six weeks. Under the influence of these grasses, plains that were entirely bare will turn green and become valuable pasture land in a very short time. It is considered a very nutritious grass for stock.

Bouteloua eripoda (woolly jointed grama).—This grass is also known as the "black grama," and forms a large portion of the native forage of this district. It is somewhat different from the other perennial gramas in habit, growing more like the six-weeks gramas. It does not grow in bunches or clumps, but is rather diffuse. It gets the name of "woolly jointed grama" from the fact that the internodes or "joints" of the stems are thickly covered with silvery white hairs. Late in the season the stems become dark colored, and from this it gets the name of "black grama." The analysis of this grass indicates that it is not so good a food as most of the other grasses, since it is particularly poor in protein.

Bouteloua curtipendula (tall grama).—The tall grama or "hairy mesquite grass" is perhaps the most widely distributed of any of the grama grasses, being reported from nearly all of the States west of the Mississippi River and from several east of it. It is usually found on rocky hillsides and along the bases of the mountains, though it is not uncommon in the valleys and on the higher parts of the mountain ranges, having a vertical range of three or four thousand feet. It cures as other native grasses do, and is considered a valuable feed by stockmen. Stock of all kinds eat it readily. It is frequently cut with other grasses by those who use and sell wild hay in this Territory. It has been recommended by good authority as an addition to the pasture grasses of Tennessee, and is said to be cultivated to some extent in the Southern States and to be much prized.

Eremochloe kingii Watson.—This is a small grass. It seems to be well fitted to the climatic conditions of high, dry, and hot plains. It produces a crop every season, no matter how little rain falls. Its nutritive ratio of 1 to 11.6 is much better than that of corn stover, and indicates that it may be a moderately good food. The plant is small and tough, and stock seem to eat it only when there is nothing else left. Its main value appears to be in the fact that it is almost sure to produce a crop when other grasses fail.

Distichlis spicata (salt grass).—This is the true salt grass (also known as alkaline grass), and it certainly deserves either name, since it forms a thick sod over these marshy, alkaline "flats" and "draws," which are of comparatively frequent occurrence in this Western country. It grows well where alkali covers the surface of the land with a thick, white crust, provided there be sufficient water to supply its needs. It is cut in some localities, making a poor hay, but in this Territory, as far as is known, it is only used for a pasture grass. Animals eat it readily while it is green, but it should not be fed by itself.

A description of a number of other varieties of forage plants might be given if it were not for lack of space, and I will only mention the names of a few others, such as the Milo maize and Kaffir corn, Italian millet, Pearl millet, alfalfa (on which quite an article appears in this report), mesquite, tornillo, prickly pear, and sotol.

I mention these grasses more fully than I would do, because in many instances the newcomer in New Mexico is impressed by the apparently barren stretches of mesa which surround the valleys. He is told that stock raising is one of the principal industries of our Territory, and he immediately wonders where the food of all these cattle, sheep, and horses is obtained. But the dry, barren mesa produces much valuable forage, and, with the increase in numbers of the stock upon the range, the animals have acquired the habit of eating anything in the way of vegetable matter which is at all digestible or nutritious.

OUR HOME MARKETS.

The manifold resources of New Mexico command notice from the home seeker and the immigrant, among other reasons, because it will be years before the Territory of New Mexico will produce sufficient to fill the demand of the home market. Pastoral and allied industries are inviting to the young farmer of the East who is seeking a broader field in which to toil, and where his renumeration will be more munificent than the Central and Eastern States allow.

The mineral wealth of the Territory and the surrounding States puts a higher premium on agriculture in New Mexico than is possible in Illinois, Indiana, or Ohio, for, while those States are fully equipped for horticulture and agricultural successes by excellence of soil and ample humidity, they are devoid of that large consuming element that produces no breadstuffs, yet delves into the earth and secures wealth which the producer of grains, fruits, and clothing needs as a reward for his effort. It is only in recent years that the manufacture of flour commenced in Colorado and has since partly supplied the demand in New Mexico. Previous to that time the supply was drawn from the East, 200 carloads coming to Las Vegas in a single year, and to other towns in like proportion. Every day in the year now trains roll into the Territory from the East, laden with the products of other States which can be made or grown within our Territory. There is an actual demand within the Territory for 20,000,000 pounds of flour annually; over 8,000 tons of corn are used, and the same general facts are applicable to the other articles of domestic consumption. In every instance there is an actual home market for everything the farmer and fruit grower raises. It is waiting for the home seeker and immigrant to supply it from the soil of the Territory of New Mexico. No one has taken the trouble to raise such articles in sufficient quantities in the past. But the era of advancement in this direction, having set in, only needs to be pursued a few years, when the industry of California will be repeated, and New Mexico will be shipping fruit to Europe. Now is the time for a start for many a young farmer from the older sections of the Union which have failed to givo reward for industry. If he will head for the valleys of New Mexico, where new districts are being put under irrigating canals by heavily capitalized companies, he will be convinced, after investigation, that a sure road to wealth, independence, and health will have been entered upon when he concludes to cast his fortune with the coming State of New Mexico.

BRIGHT PROSPECTS—NEW MEXICO IS FORGING AHEAD AND IS ALL RIGHT IN EVERY RESPECT.

[Daily New Mexican, Santa Fe.]

"I tell you what it is," said Director Hardinge this morning to a New Mexican scribe who dropped into the weather bureau office in the eager and happy quest for general information, "the press of the Territory is going it strong on the mining affairs of New Mexico, and we are told in glowing, golden words of new 'strikes' and 'leads' and of big 'deals' that make our mouths water; and it all may be true—I hope it is—but this part of the country is going to get a stronger push toward lasting development this year from its fruit, farming, and stock interests than it is likely to get from all the 'strikes' yet struck.

A BANNER YEAR.

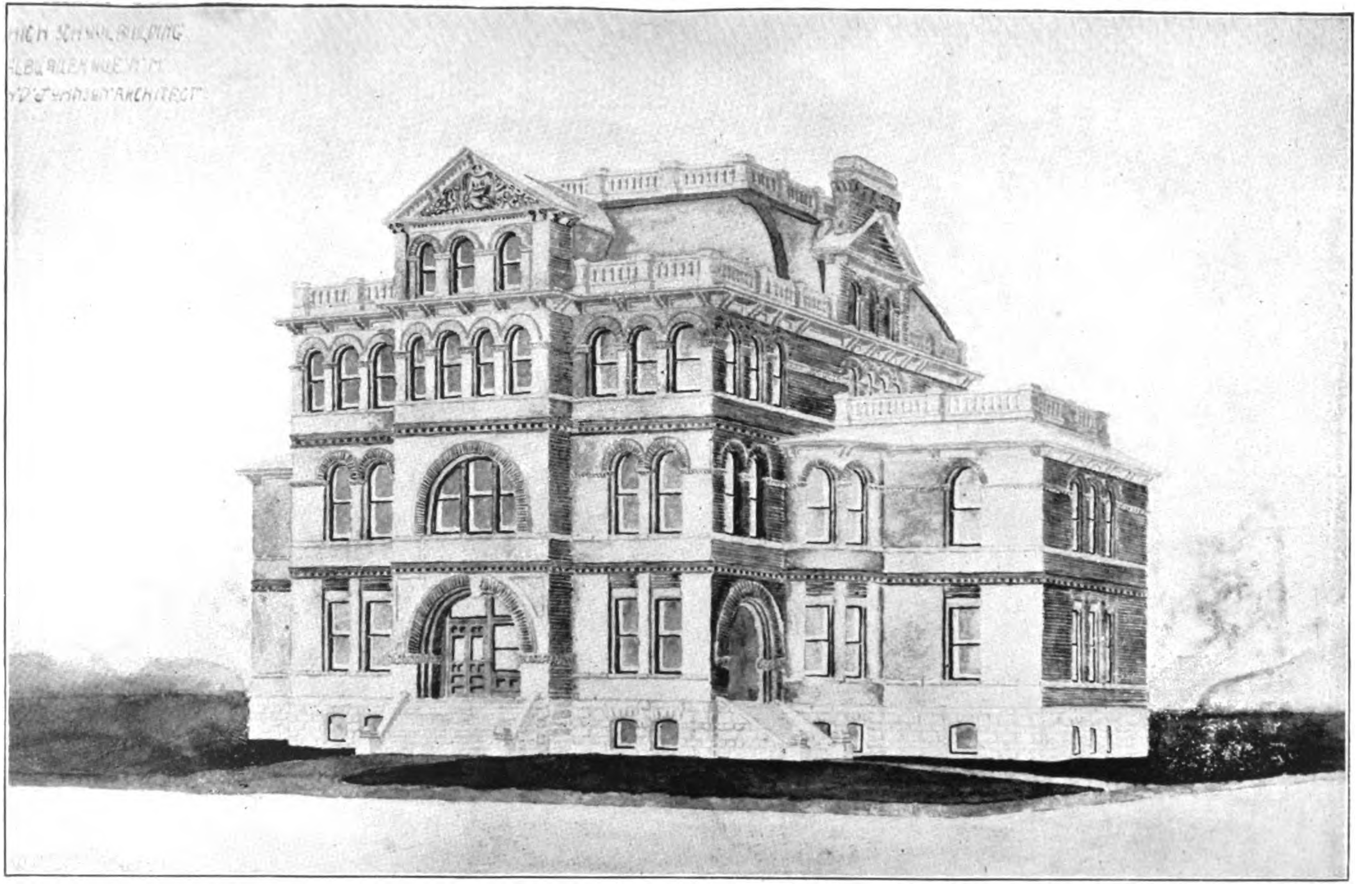
"It may be somewhat early in the season to make a forecast; but if one can judge from present conditions this will be a banner year for New Mexico in these things. Of course, there are bound to be a few scattered localities that are not blessed in every particular. For instance, apricots will be a very short crop in nearly all central and northern orchards, nor are early peaches any too promising for these localities; or the late frosts may have nipped early potatoes, etc., in some more exposed gardens; or some districts may be short of water, as until very recently down in the Mesilla Valley; but the general prospects for vineyards, orchards, field crops, and for stock are very promising just at present.

SPLENDID PROSPECTS.

"If the season continues so favorable—and the probabilities are that it will—the immigration bureau will be worked to death next year and will look back upon its present strenuous labors with a sigh for the halcyon days of the past. Already a higher tide seems to be setting our way. Since the 1st of January last this office has received more applications for climatic data than for any whole year previous. Physicians, tourists, dissatisfied Eastern farmers, are all getting into an inquiring mood as to what New Mexico has to offer. Just this morning I had a letter from a young man now living in Michigan, who was a former volunteer observer of this bureau at Monero, and he wants to come back to New Mexico, and wants to bring two more ambitious young men with him, believing this to be the place. New Mexico has little trouble in holding what she gets, and those once induced to come here are bound for life. Yes, I am enthusiastic about our prospects just now, and I think we all have a right to be."

BRIEF INTERVIEWS WITH PROMINENT PEOPLE FROM ALL PARTS OF THIS GREAT TERRITORY.

In his rounds among visitors from all parts of the Territory at Santa Fe, June, 4 to attend the capitol dedication exercises, a New Mexican scribe found them all talking New Mexico's prosperity.



HIGH SCHOOL BUILDING, ALBUQUERQUE.

RAILROAD EXTENSION.

Hon. J. F. Hinkle, Lincoln County: "The cattle and sheep industry is on a boom in our section. The ranges of Lincoln, Eddy, and Chaves counties never looked better. Farming and mining are receiving more attention than ever in history, especially alfalfa and coal, two great staples with us. The El Paso and Northeastern road is to build northeast and may send a branch up toward Santa Fe to connect with the Denver and Rio Grande system. Along the line of the Hagerman road the country between Amarilla and Roswell looks like one great wheat field. I never saw it looking so pretty. There will be a fair crop of fruit only in that region, hail having done some damage."

FINE FRUIT PROSPECTS.

Hon. Malaquias Martinez, of Taos: "Our county will break its long and honorable record as a producer this year. The fruit is the finest we ever had. The alfalfa, hay, bean, and corn crops never promised better. As the New Mexican recently remarked, Taos Valley surely does need a railroad. The lamb crop this season adds about 95 per cent to our already large flocks. The mining operations are starting off satisfactorily, though work in the higher mountainous districts is yet retarded by snow. The Copper Hill Company, which has invested $150,000 in a big mill, now has water flowing into its reservoir, and will begin treating ore in a few days."

ALFALFA A FEATURE.

Andy Horn: "The Pena Blanca section of the Rio Grande Valley has made up its mind that alfalfa is the thing to raise. We have a fine broad valley, the climate, and plenty of water, that yields us four cuttings of alfalfa a season, besides giving pasturage. Quite an industry in baled alfalfa has already been built up. Much of it goes to the Cochiti mining district. There is a large increase in the acreage this year. The two new bridges on the Bland road, some of us think, ought to be connected by a frame trestlework. Between them water is now running hub deep over the island, and the Rio Grande is not near so high now as it is likely to be in thirty days."

DECREASE OF CRIME.

Chief Justice Hon. W. J. Mills, of Las Vegas, arrived in the capital to preside over the capitol dedication ceremonies. Although court is in session, he took a day off in order to attend this memorial occasion. In speaking to a representative of the New Mexican the chief justice stated that crime had materially decreased in San Miguel County, and that, in fact, no serious crimes had been committed during the past six months in that county. The grand jury, now in session, has found but one indictment of any consequence, and that for cattle stealing. No murder has been committed in the county since the last term of court. Judgment has been obtained by the county against Carlos Gabaldon, defaulting county treasurer, and his bondsmen for $7,500, and his trial will take place shortly on a criminal charge. The judge complimented the good people of Las Vegas and San Miguel County upon this most gratifying condition of affairs. From a material standpoint he said that Las Vegas was growing continually and continuously, and that the stock raisers, the sheep men, and the farmers of the county expect a most prosperous year, which, of course, would benefit the merchants and the community at large.

THE GOLDEN COCHITI.

D. B. Wilson, miner, Bland: "The golden Cochiti is being well prospected this spring. The gold-producing area promises to be materially extended before the summer is over. The town of Bland is rather dull just now, owing to the failure of the Navajo company to push work as rapidly as was expected on its new 350-ton mill, but we are looking forward to a genuine boom before the fall season opens. The ore bodies, of mammoth proportions, have been sufficiently opened to show that the pay is there in immense quantity, and there is a good deal going on in the way of new capital coming in. Many influential experts, representing New York, Boston, and Denver capital, have of late made careful examination of the district for people seeking investments in the camp, and as a result several big deals are pending, the closing of which will excite fresh interest in the Cochiti district."

WONDERFUL ALAMOGORDO.

Dr. George C. Bryan, of Alamogordo: "Otero County continues to move along quite close to the head of the procession of progress and prosperity. Our town is showing a steady, substantial growth, and new settlers coming in from Pennsylvania, Kansas, Missouri, and Texas are keeping the country round about well up with the town. Alamogordo is headquarters of the El Paso and Northeastern Railroad, which has proved a dividend-paying corporation from its very inception. The road is now doing a large business, especially in handling coal and lumber."

EDISON'S PROCESS A SUCCESS.

S. G. Burn, manager of the Galisteo Mining Company: "The Edison experimental placer gold plant is a pronounced success. That's all we can say about it at present. The machine has been in daily operation for more than a month, President Hoyt being constantly on hand to note its work, and the results have given us the greatest satisfaction. You can imagine we were pleased the other day when we felt that the time had come when we could safely communicate this fact to Thomas A. Edison and the Eastern directors of the Galisteo company. We have great plans for the future which can not just yet be discussed. Mr. Edison hopes to come out this summer to see the little plant in operation before we commence work on the larger one. Perhaps he will reach Dolores this month."

THE MESILLA VALLEY.

Maj. Eugene Van Patten, of Las Cruces: "General business conditions throughout the Mesilla Valley are first class. A large acreage has been planted by the agricultural folk, our fruit is now beginning to ripen, and shipments will be in full blast in another two weeks. The live-stock industry is doing nicely, and best of all, the ditches are full of water for irrigation of the crops. We count on the most prosperous summer and fall trade we have enjoyed in years."

THE MEADOW CITY.

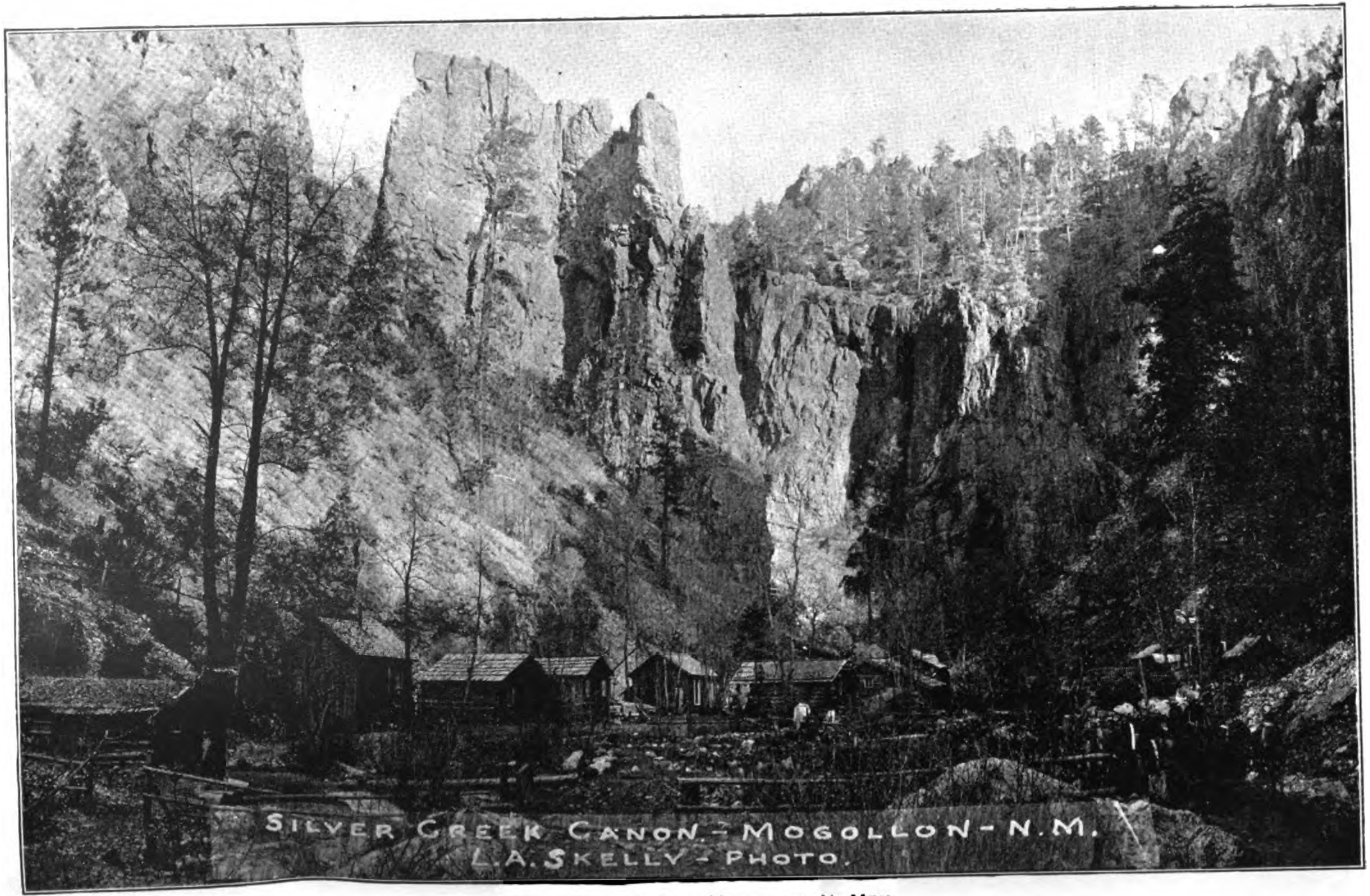
Hon. M. W. Browne, of the firm of Browne & Manzanares, of Las Vegas: "We Las Vegas people are glad to renew our friendship with the citizens of the Territorial capital on this happy occasion. Business? Oh, it looks mighty good over our way. San Miguel, Mora, and Guadalupe counties are prospering, and when that is the case Las Vegas reaps a large share of the good results by reason of her importance as a commercial distributing point. A great many of our townspeople are out on the ranches just now attending their herds and flocks. We pride ourselves, you know, on being the chief wool marketing center. Las Vegas is growing right along. Many very attractive residences and business blocks have gone up in our midst during the past year and we are still building."

SIERRA COUNTY.

Hon. W. S. Hopewell, of Sierra County: "Live stock and mining are the chief industries with us, and you can say that little Sierra County is making progress and doing well. As to mines, we have in the Black Range Mountains a region of virgin country that is just now attracting widespread attention, and there are far-sighted men who think that the next great mining excitement to strike the West will be centered in this range. Cattle and sheep are away up in price, and that pleases the producers, though our one special need just at present is a thundering good drenching rain to help out the live-stock range."

THR BANNER MINING SECTION.

Hon. W. H. Jack, of Silver City: "We Grant County people still claim the banner as a mining section. Our mines have for years led every other county in New Mexico in the line of mineral productiveness. During the past six months Silver City has attracted hundreds of mining men from Colorado and California, and I am within the bounds of truth in saying that many millions of dollars have been expended by them in Grant County properties. Our gold, copper, iron, and silver mines have been well developed, and this accounts for the readiness of investors to take hold of them. The live-stock industry throughout all New Mexico is in gilt-edged shape—never better."



SILVER CREEK CAÑON, MOGOLLON, N. MEX.

IN TAOS COUNTY.

Dr. T. P. Martin: "In my long residence in Taos Valley I never saw northern New Mexico in better physical and financial shape than to-day. So far as I have heard all lines of trade and industry are prospering beyond precedent. I see nothing in sight at this time that can block the wheels of progress. Outside capital in abundance is pouring in to help us build up 'the sunshine State.' Certainly the year 1900 bids fair to be by far the most prosperous in our long history."

MINING.

GEOLOGICAL ASSOCIATIONS IN NEW MEXICO MINING CAMPS.

SIR: In accordance with your request, I transmit herewith a short account of the geological associations prevailing in a number of the mining camps in the Territory. While the data incorporated in this report are not all strictly of an economic nature, it is hoped that they may prove of practical service in the hands of intelligent mining men by aiding as much in the avoidance of unnecessary expenditure as in the direct exploiting of the mines. These data are derived from the work of the geological survey of the University of New Mexico, and form a part of the material to be published in extenso in the second volume of the report of that survey now in course of preparation.

Notes on economic geology of New Mexico.—It may be premised that the Territory of New Mexico is of so enormous extent that it follows as a natural consequence that its geological and economic relations differ in its different portions so entirely that the work done in any given area is no sufficient guide for work in other portions. It is necessary to carry the minute study of the formations into every section of the Territory before reliable generalizations can be formed.

The work has proceeded far enough, however, to enable us to deduce a number of general principles, which if they had been recognized a few years ago would have saved an enormous sum to the Territory, and would have done much to have conserved her good name as a mining country.

In spite of the diversity in details, the Territory is sufficiently homogeneous geologically to enable us to treat it as one geologic terraine. Most characteristic of the geological features of the section is its newness. For the most part the rocks which cover its surface and determine its topographical and economic character date from recent geological ages. The latest of the great geological cataclysms, the descent of the glacial ice sheet, has scarcely affected the Territory directly in any part. It is true that there are evidences of local glaciers in a few places and that the valley of the Rio Grande is, in its upper courses, to some extent filled with material that may have been transported by the floods from the melting ice of the continental glaciers farther north, but otherwise the Territory is innocent of the wonderful glacial phenomena of the Northern States. The effect of this escape from the educating effect of the "great, cold, continental sorrow" is discoverable in a crudeness of topography, an angularity of outline, and unretentiveness of soil that has a very important effect on the economic development of the Territory. As an acute observer said many years ago, Arizona and New Mexico are the best drained parts of the United States. The effect of the ice sheet was to pulverize impact and to fill with impervious basins lined with clay the vast thickness of soil it produced. In New Mexico the soils are either due to the disintegration of the rocks in place or to the collection of débris carried by streams.

This fact, in connection with the loose and friable texture of the recent rocks so largely making up the surface deposits, tends greatly to facilitate the escape of the waters from precipitation and from incoming streams. Nor is this simply a curious fact, for it is fraught with tremendous import. In various parts of the Territory, with similar climatic conditions, entirely different crops are demanded. Potatoes will grow in one canyon and not on the opposite side of the same range or in an adjacent canyon. This lack of homogeneity in the soils of the Territory is seen equally in the nature of the plants naturally growing in different places at the same altitude, and makes necessary a minute study of the soils from a geological point of view all over the Territory.

The climate, in like manner, reflects the soil conditions. No one has sufficiently emphasized the effect of soil in determining the climate of New Mexico. It may be confidently stated that there is enough rainfall to insure the growth of crops in many if not most parts of the Territory without irrigation if only the soil were sufficiently retentive to hold and utilize the precipitation. To this may be added the well-nigh demonstrated probability that if the soil were more retentive this in itself would tend to increase and distribute the rainfall. In this fact there is hope, for if sufficient pains are taken to preserve and extend our forest areas and to increase the cultivated lands we may hope for a gradual modification of the climate and a tempering of the violence of the storms and greater distribution of precipitation. It has been possible to show that the local rains of this Territory are extremely sensitive to the radiant heat from the surface beneath, so that a bare extent of sand will actually ward off rains which fall about it.

The oldest rocks in the Territory known to the writer are granites and gneisses, which are generally only visible where the overlying rocks have been removed by erosion or faulting. Large areas of granitic rocks, however, are exposed in the northern part of the Territory, and in them are found quarries of mica, while they afford a good association for the metals when penetrated by basic rocks of later date.

These granites are exposed in the ranges bordering the Rio Grande south of Santa Fe, where they lie unconformably below a quartzite of varying thickness, and this, in turn, supports the great Carboniferous limestone series, which here attains a thickness of over 700 feet. The age of the granite has been a matter of controversy, but it is certain that it is metamorphic and represents some formation older than the Subcarboniferous. Beds of metamorphic limestone have been found in the midst of the granite.

The contact between the Carboniferous limestone and the quartzite (the place of which is sometimes taken by other modifications, such as a coarse conglomerate with pebbles from the underlying granite) is quite frequently impregnated with iron, and when this is the case the iron often forms a precipitant for copper. Such accumulations occur in the mountains of Post-Carboniferous age along the Rio Grande Valley in the Oscuro, San Andres, Organ, Caballo, and other ranges. Veins in the limestone admit solutions of various substances, which penetrate to the quartzite or granite, and at that point, in the presence of air and water, the iron reduces or precipitates the copper. Thus have been formed local deposits, which are richest on the exposed surfaces and make a fine showing. The ore is of chalcocite, cuprite, melaconite, malachite, and azurite, and is often very rich. All these deposits are, however, fickle and superficial, and while they may reward small capital are rarely of sufficient extent to warrant great expenditure.

The source of much of the copper in the Territory is, however, to be found in a formation above the Carboniferous and only separated from it by the obscurely-defined Permean formation (which latter consists of limestones, shales, and sandstones assimilating with the Carboniferous below, and in some cases apparently passing by gradations into the Jura-Triassic). This formation (the Jura-Trias) is composed for the most part of red or maroon shales and sandstones, often attaining great thickness, but in central New Mexico usually limited to a few hundred feet. Although nearly devoid of fossils, this sandstone frequently contains large trunks of trees as well as leaves and branches which, in some cases, are fully silicified, while in others they are changed to coal, and in still others the carbon has been substituted for by copper. The latter process is easily intelligible chemically if water charged with copper in solution were present during the decomposition of the organic matter. These beds of vegetable matter accumulated in shallows of the ancient sea and form lens-shaped masses usually of no great extent. In some cases large trunks are fully transformed to copper ore, while in others only part of such a trunk is so transformed. In still other cases nodes or concretions of copper accumulate in shales of this series. There has usually been surprisingly little alteration in the copper in these shales, and the nodules then consist of pure copper glance or a mixture of the glance with iron. The Jura-Triassic sandstones are widely distributed and are easily recognized by the red color, and the occurrence of copper in the beds is almost as widespread as that of the formation. Such deposits occur at different places along the east side of the Rio Grande from the San Andres Mountains northward and are continued into the Mora region, also in the Jurassic deposits west of the Cochiti and thence westward. In some cases the strata are tilted and the alternate soft and hard layers leave long parallel ridges of the indurated sandstone that have been mistaken for igneous dikes and have led to an entirely wrong idea of the nature of the ore bodies.

The following formation is the Cretaceous, which is represented by a vast series of yellowish and gray shales and sandstones. The latter often afford available building stone, while the shales are in a number of widely separated basins interstratified with coal seams. Above the Cretaceous or unconformably deposited about its eroded and faulted edges are the marls, clays, and sandstones of the Tertiary age. In these beds there are few elements of economic importance aside from clay for brick. The Tertiary beds tend to be strongly modified by proximity to other older rocks, or rather they are composed of the débris from the destruction of their predecessors, and accordingly assimilate in composition and appearance to the parent rock. Thus, in a region underlaid by Jurassic rock, the Tertiary may assume the same red color, and in the vicinity of the great lava flows the materials of the Tertiary are largely or wholly derived from the products of eruption from these craters, as may be seen in the vicinity of the tufa flows of the Cochiti. Material for excellent brick has been found in the dark-blue shales of the Cretaceous, as at Las Vegas, but for the most part the fictile clays must be sought in the products of river erosion. A curious exception is afforded by certain Carboniferous shales and fire clays east of Socorro and in the product of alteration of andesite and other basic rocks, where they have been covered by trachytes and other acid rocks. The reaction between these rocks in favorable circumstances produces a kaolinization of the feldspar and the removal of other ingredients, leaving fine white china clay as a result. Such beds are to be seen in Socorro Mountain and elsewhere.

The most important storehouses of the precious metals are found in the igneous or volcanic rocks of the Territory. From this list must be eliminated the last and most conspicuous class of such eruptives—the basalt flows of Post-Tertiary age. A very large part of the Territory is dotted with craters, from which the lava sheets have spread for many miles. This basalt is later than, and so covers, rocks of all ages, except the deposits of the rivers. Where the underlying soft rocks have been undermined by percolating water, as has often occurred, the sheet breaks down irregularly under its own weight and produces what is aptly called "mal pais," or bad land. No substance of economic importance has been found in these basalts, though they are rich in iron, and the heat evolved by the thin sheets has been insufficient to be instrumental in the segregation of ores from other rocks.

The remaining igneous rocks may be grouped into three general classes of intrusives—the andesite series, the trachyte series, and the rhyolite series. The first and oldest of these is the class of basic eruptives, mostly dark-bluish or brown rocks, with white crystals of feldspars mottling the homogeneous background, and, when these crystals are conspicuous enough, constituting what the miners call "bird's-eye porphyry." This rock is one of the most general sources of gold—that is, it almost constantly forms the country rock or is in some way associated with the gold ores. It is true that the andesite is not in itself a suitable rock in which to seek appreciable quantities of the precious metals, but when it has been greatly influenced by the quartziferous later intrusives, so that it is shot through and through by dikes of felsite or quartz, or where flows of these other rocks are interbedded with the andesite, the segregation of more or less of gold and silver may be said to be the rule. This is a fact that will be of the greatest possible help to the prospector as well as the mine reporter.

It is not always easy for the untrained eye to distinguish the andesite from other dark rocks with porphyritic inclusions, and there are light-colored and tufaceous phases of the andesite. Sometimes even the trained petrographer will be deceived or in doubt till he has the opportunity to use the microscope. The geological survey of the university offers its services in making such determinations, and it is well supplied with the necessary instruments.

If we were to name the mining camps where the country rock of the gold dikes is formed by the old andesite series of eruptives, nearly all the important mining camps would be included. The Mogollons, for example, afford illustrations of central andesite mountains covered and penetrated by later flows of trachyte and other acid eruptives. The same is true of the Black Range and of the Magdalenas. The Cochiti is a beautiful illustration of an isolated group of andesite peaks surrounded by a girdle of trachyte and obsidian eruptives. Here the form of the later eruptive is scoriaceous, and the beds of tufa cover vast area and no doubt protect many rich lodes from the destroying hand of the miner. In southern Colorado we have traced the applicability of the same law. The Cerrillos group has but a small core of andesite in the midst of later material, but forms, with the series of mountains to the south, a special case.

The Ortiz Mountains, for example, are chiefly composed of a remarkable rock of a granitoid appearance, which proves to be a rare species of ægerine syenite, but intermediate between an acid and basic rock. This extends in vast sheets over the Cerrillos coal fields, and in some cases interpenetrates the coal series, and has been the agent in the transformation of part of the lignite into a fine quality of anthracite. The radiating dikes of the same material form conspicuous landmarks in this region. The mines in the Ortiz are due to quartz intrusions in this material, which plays the same part that andesite does in other cases, and, moreover, it is intimately associated in many places with the true andesite. The southern part of the Cerrillos Mountains is made up largely of the same syenite, which has a decidedly greenish color in typical specimens, but there are also dikes and bosses of andesite immersed in the later flows. The syenite in this case has been intimately blended with fragments or great masses of the sedimentary rocks through which it has broken its way. These rocks were mainly Jura-Triassic and Cretaceous. It would appear from a careful study of the region that the turquoise owes its origin to action of the molten syenite on the copper-bearing sandstone of the Jurassic it had caught up in its escape. In the same way the deep deposits of lead and zinc may be explained as a result of the action of these flows upon the underlying Carboniferous. Other instances of this kind bear out the theory of such interaction.

The San Pedro Mountain is a more complicated instance of the interrelation of the andesite and syenite flows. The central part of the group is an old andesite volcano, but it has been thoroughly transformed by the intrusion of the syenite, so that the two rocks are apparently interbedded over the central parts. To the east the syenite is the prevailing rock, and large sheets and dikes of the same material occur. As in the case of the Cerrillos, the flows have caught up and uplifted the sedimentary sandstones and limestones. A curious garnet rock has thus been formed, and along the contacts of this are large deposits of copper and gold. The andesite and syenite association is also a good one for gold, and the region is a favored one in its geological construction, though somewhat circumscribed and disturbed. The effect of the eruption has made itself felt on the Carboniferous limestones and, as in similar situations elsewhere, the contained lead and silver have been segregated by this agency, forming valuable mines.

South Mountain is also a syenite uplift, but the andesite element is lacking, and accordingly there seems to be no separation of gold. The adjacent limestones have, however, produced rich lead-silver deposits of rather small and irregular nature.

In the Santa Rita district we have an illustration of the application of another principle. The region is essentially granite, the granite being, like that elsewhere in the Territory, of a metamorphic nature. Upon the granite and its superjacent quartzite or conglomerate is a large sheet of limestone of Subcarboniferous age. Along the Hanover Creek is a ridge-like uplift, from which the lime dips both ways, revealing the fact that at the contact of the lime with the underlying granitic rocks there is a collection of iron. In this case the iron is of great extent and good quality. In many places the iron has served as a precipitant for copper in the way above described, and large copper deposits occur. In the Santa Rita district proper is a large basin, affording an extraordinary opportunity for such precipitation. The basin is not of recent origin, as is seen by the occurrence of artesian water and the extensive alteration (kaolinization) of the feldspars in the porphyrys and granites of the basin. The iron may have come from the disintegration of the granite. The basin seems to have been formed by an uplift and fault to the south, cutting off the natural outlet. The iron appears on the margins of the basin and doubtless played its part in the collection of the magnificent copper deposits. The country rock is chiefly an orthoclase porphyry. The ores may originally have been in the form of the sulphides, but they now embrace the entire range from native copper, in beautiful plates and concretions, to malachite and azurite. Melachonite and cuprite are the characteristic ores in many of the openings.

The above instances are cited to illustrate principles which the observant miner may apply for himself. A few of these points may be summarized as follows:

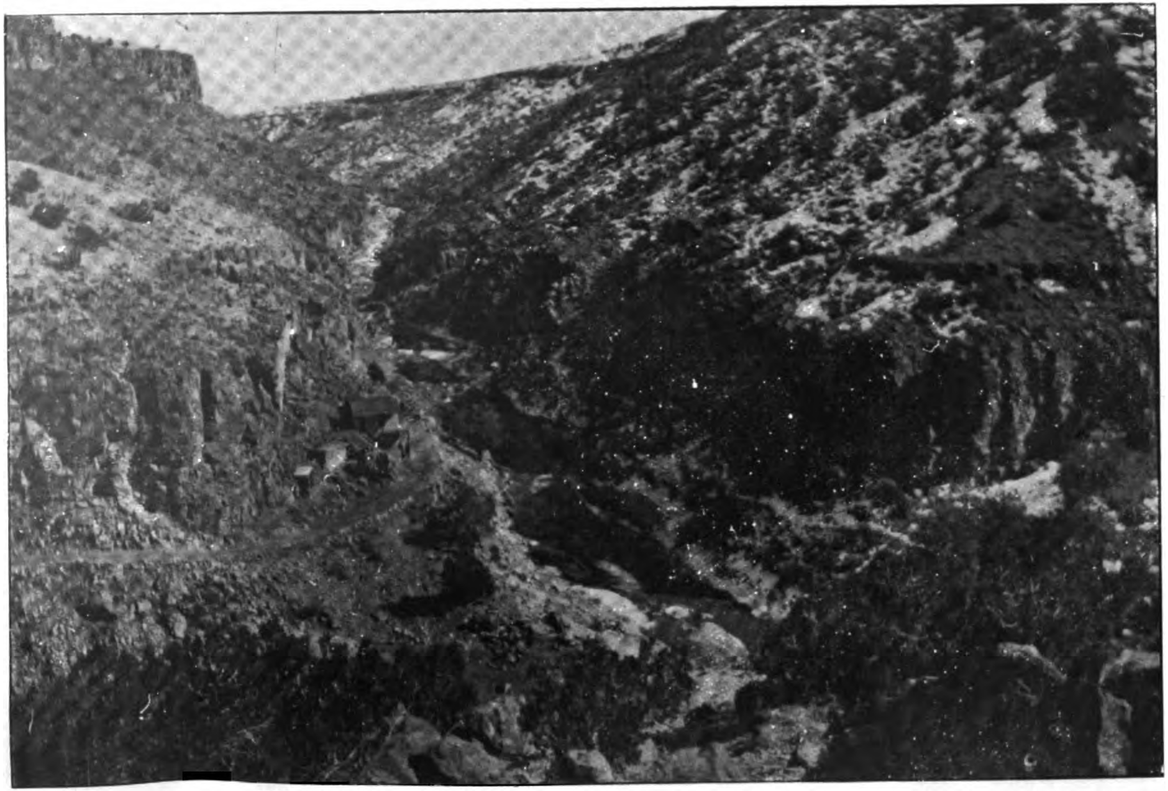
Gold and silver are indigenous to the older eruptives, but require the influence of later siliceous rocks to segregate them. They need not be sought in the later trachyte or rhyolite rocks unless there be present andesite or other basic rocks. It is useless to search for ore in the recent basalts. Copper is indigenous in the Jura-Triassic sedimentary sandstones, and may be found in organic deposits. It may also be found in the contact between the stratified rocks and the underlying granite, but peculiar circumstances alone warrant the hope of discovering large accumulations in either instance. Such a condition is afforded when the granite forms a basin and when iron deposits have preceded the copper. Lead is to be sought in the Carboniferous limestones where the latter have been brought within the segregating influences of dikes of older eruptives. The lead will be found in shoots or channels worn in the limestone or in more permeable zones. The silver values are likely to be greater where the lead has been sublimed by heat. The original form of the lead is as galena, and the occurrence of carbonates indicates a concentration by water action. Turquoise is a result of metamorphism of copper-bearing stratified rocks by the action of intrusive igneous rocks.

These aphorisms might be largely extended, but may serve to indicate the tendency of recent research and the scope of the work now under way.

Very respectfully submitted.

C. L. HERRICK.

HON. MIGUEL A. OTERO,
Governor of New Mexico.



Cañon of the Rio Grande River at Walmsley's Crossing, Taos County, N. Mex.

NEW MEXICO MINERALS.

GOLD, SILVER, COPPER, LEAD, AND IRON.

RICH FIELD FOR PROSPECTOR AND INVESTOR IN EVERY COUNTY IN THE TERRITORY—THE CLIMATE PERMITS OPERATIONS THE YEAR ROUND.

That the whole mountain region of New Mexico presents a sure prospecting field is a safe assertion. To say that a few favored spots at which developments have taken place—merely points on the vast area of known mineralized territory—show even a small part of the great resources of our mountains is false. In the heart of the best developed camps is still much virgin ground, and much of the mineral-bearing area has scarcely been scratched by the prospector's pick. The chances in this Territory to-day are equal to those presented by the Cripple Creek or Leadville districts.

New Mexico has upward of 80 mining districts, which are widely distributed, proving that the mineral wealth is not confined to one section.

In the northwest, San Juan County presents great possibilities for extensive hydraulic operations.

Next, to the east, is Rio Arriba, where many thousand acres carry placer gold in sufficient quantities to permit of large enterprises. Perhaps no stream in the West presents the same advantages for the successful employment of first-class placer dredging machinery as the Chama. This gravel runs by test from 35 cents to $1.25 and in some cases as high as $1.75 per cubic yard. The famous mica beds are also in Rio Arriba County.

Taos County is not only a rich field for the placer miner, but for quartz mining it has districts already developed which indicate its boundless wealth. The Red River country is already well known to the mining world and is rapidly making a reputation as a producer of gold. La Belle and Amizett are also vigorously pushing to the front, development showing great possibilities.

Colfax County has already produced many millions in gold. Comprised within the boundaries of the Maxwell grant in this county are a large proportion of mineral lands, and the liberal terms given to prospectors by the grant owners is worthy of notice. Among the districts on this grant are Old Baldy, a large producer of gold; Ute Creek, where is located the famous Aztec mine, with a record of almost $1,000,000, and the Montezuma, a producer of about $300,000. There is great activity in Moreno Valley and in the Elizabethtown placers, which have to their credit over $200,000 in gold. Hematite is another promising camp in the immediate vicinity.

One of the richest mineral regions of the world is to be found in southern Santa Fe County. The placers at Dolores, Golden, and San Pedro, which were worked more than two hundred years ago by the Spaniards and are still being worked with "dry washers" by their descendants, have an inexhaustible supply of paying gravel, and the mountain range is one vast upheaval of mineralized rock. Cunningham Hill, in this district, is famous as being a mountain of ore. Dolores, San Pedro, and Golden were all mining camps before the discovery of Pike's Peak. At Dolores the Ortiz mine was a producer for years, the first milling machinery for the mine having been freighted across the plains before the advent of the railroad. It has a record of several millions, and preparations are under way to make the mine an extensive producer again. Near the Ortiz mine is the Benton, also a heavy producer of gold in former times, but idle for several years owing to litigation. The Benton is now in the hands of the Waddingham estate. Near San Pedro the most noted properties are the Lincoln Lucky, the Gold Standard, and the Santa Fe Copper Company's mines. The Gold Standard has recently been bonded to capitalists for ninety days at a comfortable figure. At Golden is also located the Monte Cristo Mining Company, which is successfully working the immense gravel deposits on a large scale. Near Cerrillos is situated the turquoise mines. The output of turquoise since 1890, according to official report, has been about $2,000,000, although the former owner of the property claims this to be an underestimate, and says the yearly output since 1893 will reach $1,500,000.

Bernalillo County has 5,000 square miles of mineralized lands. The Cochiti district, in the Jemez Mountains, is becoming almost as well known as the far-famed Cripple Creek, and is willing to dispute with the latter the title of the "greatest camp on earth." The Albemarle has one of the finest milling plants in the West, and the returns from the company's mines are a substantial proof of what energy and capital will accomplish in New Mexico. Others of the best-known properties in the district are the Washington, Lone Star, Crown Point, Iron King, and many more. Hell Canyon, 20 miles to the east of Albuquerque, has some large bodies of free milling ore and fine indications of copper. Considerable work is now being done in the district, and the near future will see it attracting the attention it deserves.

The Magdalena Mountains, in Socorro County, have been for years the scene of great mining activity. Lead-silver ores abound in the district, and late developments at Water Canyon and Copper Creek show good bodies of gold ore. The Graphic mines, under the management of Capt. A. B. Fitch, are well-known producers, and are at present being worked to full capacity day and night. The Kelly mines are also located in these mountains. In western Socorro County, near the Arizona line is the Cooney district, rich in high-grade silver ores, but now being worked for their values in gold.

The far-famed Black Range of mountains, extending through Sierra County in a northerly and southerly direction, form the Continental Divide and constitute one of the greatest mineral sections of the world. From San Agustin plains on the north to Cooks Peak on the south, about 120 miles, and with a breadth of 40 miles, is a vast mineralized area which has been producing gold, silver, copper, and other precious and useful metals for years. The established districts on the north most largely developed are the Black Range and Apache, whose possibilities are as yet practically untouched and are beyond estimate. Following the range south are the Animas, Lake Valley, Percha, and Kingston districts, the principal mining centers on the belt above spoken of in Sierra County. At all these points are highly productive gold and silver mines. The ore from the Silver Cell, one of the deservedly famous mines in this range, was so rich that it was refused by the smelters and had to be sent directly to the mint as bullion, and the "Bridal Chamber," in the same range, took out in one piece silver valued at $80,000. One chamber, with the dimensions of an average dining room, surrendered to its lucky owners more than $1,000,000. Is it not time for capital to more thoroughly investigate a country with such stores of wealth? The immense gravel beds, rich in gold, at Hillsboro should also be mentioned.

Grant County has within its boundaries some of the best-known gold-producing camps of the Southwest. Santa Rita del Cobre, the oldest district, has been worked since 1808, and its mines are rich in copper. Pinos Altos has a number of large producers, and the results accomplished in the past two years are proof of what capital and judgment are capable. San Francisco and New York mining men are large holders of Pinos Altos properties, and their presence in the district is felt. Hanover is rich in copper, and developments at present make special reference to the camp or individual mines unnecessary. Its ores are rich in copper, with an excess of iron. Cooks Peak is a heavy producer of lead-silver ores, and the shipping records of its many producing mines are its recommendation. Other camps in Grant County which are attracting their share of attention are Central, Gold Hill, White Signal, and Black Hawk, all rich in gold, silver, copper, etc.

Dona Ana County is dotted and crossed with mountain ranges which are pregnant with mineral wealth. Mines in the Caballo Mountains carry lead-silver ores; those of the Organs are rich in native silver, and in the San Diegos is found free-milling gold ore. There have been several recent strikes in Dona Ana County which are very rich in copper.

The Old Abe mine, near White Oaks, in Lincoln County, is one of the heaviest gold producers of the Southwest. Workings in this district have reached a depth in some mines of 800 and 1,000 feet, and at that depth ore bodies are more permanent than nearer the surface, showing that nothing is lost by deep working. The Bonito country has extensive low-grade free-milling gold ores, but has been little prospected. In fact, this entire section is almost a virgin field for the prospector. The Jicarilla placer fields are well known to the miner looking for a grub stake. The completion of the El Paso and Northeastern into this rich section will go far toward assuring its future.

In the new county of Otero can be found minerals which will bring it prominently to the attention of the mining world. Besides the new placer discoveries in the Jarillas, which cover about 40 miles of gulches, a new find of ore, believed by the lucky discoverers to be tin, is the latest, and as there are large bodies of it, if their surmise proves to be correct, it will become one of the centers of mining excitement in the Territory.

The chain of mineral deposits running through Colorado are practically the same as found throughout the entire extent of New Mexico, superficial conditions and geological formations in this Territory being almost identical with those found in Cripple Creek and other rich Colorado camps. Following the mountain range from the northern boundary through Colfax and Taos counties to the southeast through Santa Fe to Lincoln, and to the southwest through Bernalillo, Socorro, Sierra, and Grant counties, the same general indications are met, the outcroppings being conspicuous and almost continuous. Many mines in this range have been good producers for years and new and valuable finds are of almost daily occurrence. At the present time development is being carried on more vigorously than in the history of the Territory. When the prospector and investor considers that this mineralized region extends through New Mexico a distance of over 400 miles and strikes almost every county in the Territory, he can readily see that it is the most attractive field in the West. Climatic conditions which make it possible to work the year round are also an advantage not to be overlooked.

Pine, fir, and spruce cover the mountain ranges below timber line, thus furnishing a plentiful supply of timber for mining purposes.

In the matter of fuel the coal fields of New Mexico are extensive, and, as they are widely distributed, their product is easily and cheaply furnished to every district in the Territory. Labor is another feature which must not be overlooked, as it is especially cheap.

Among the natural resources of the Territory are gold, silver, lead, zinc, copper, brown and red hematite, ricolite, mica, coal, limestone, sandstone, fire clay, hydraulic cement, infusorial earth, silicified wood, turquoise, garnet, opal, natural gas, petroleum, mineral waters, mineral paint, alum rock, basalt, and the latest discovery—tin.

MINING AND MINERAL RESOURCES.

The mining resources of New Mexico are in reality wonderful. Here we have practically everything in the shape of mineral too numerous to mention, but running from salt and sulphur up to gold and silver and precious stones. And while there are numerous paying mines, none of them are what may be said to be well developed so far. All that it needs is the influx of more capital to thoroughly develop its various mines, when this Territory will become one of the richest mineral-producing regions of the Rocky Mountain Range.

The mineral resources of our Territory have been slowly but surely forcing the attention of capitalists, and the outlook for the coming year is very encouraging and brighter than it has ever been. It has been a hard matter to interest men of means in our mines, but gradually this indifference is wearing off and capitalists are now sending experts to examine into the many promising propositions throughout the Territory, and we hope for good results from the interest taken by our Eastern friends, as New Mexico offers as fine opportunities in the mining line as any portion of the globe. This interesting of capitalists means that money for development, for mining machinery, for smelters, mills, and other reduction plants will find its way to New Mexico and make the mining camps of New Mexico large producers.

GOLD OUTPUT WILL BE ENORMOUS FROM MANY DISTRICTS—EASTERN CAPITAL IS BEGINNING TO DISCOVER THE OPPORTUNITY—NOT ONLY GOLD, BUT OTHER METALS AND PRECIOUS STONES ARE FOUND THERE.

Mining matters in New Mexico can only be spoken of as surprising in every respect, and everywhere from along the line of that industry reports are continually coming in of new strikes being made, old mines being worked to their fullest capacity, and new corporations being formed for the purpose of exploration and practical working. It is being demonstrated every day, and in all of the principal districts, that there is gold and plenty of it. What is needed now is capital with which to work mines that have been proved more than good paying propositions. In many districts the experimental period is positively passed, and practical work with capital is being done. Capital is pouring in from the East, and the gold mines of New Mexico are proving vastly more productive of profits than the manufactories of Massachusetts, Ohio, and Illinois, and Eastern men are beginning to realize that such is a fact.

THE MOGOLLON DISTRICT.

Down in the southern or Mogollon district the activity is very great, and increased capacity is steadily marked. The Confidence is turning out from 80 to 100 tons of ore every day with a force of 70 miners. The ore is of good quality, and the proprietors are enjoying a well-deserved period of profits.

The Deadwood mine, in the same district, is now run in connection with the Deep Down mill, which is using daily considerable ore which averages $16 in gold and $21 in silver. There are immense bodies of this ore in sight and very easily gotten out. Numbers of smaller mines in the same district are being worked, and prospectors are actively looking up that region, and with considerable success. The Philadelphia men who are interested in that section are reported as pushing the formation of their big company, and it is expected their operations will be commenced in the near future, giving numbers of men in that region employment.

THE HILLSBORO OUTPUT.

And at Hillsboro, in practically the same district, the output from the mines last week amounted to 180 tons. This is a section which could be advantageously prospected. Other regions in the Territory have become so well known to mining men that their attention has been diverted to a great extent away from the promising Hillsboro country, although it has been demonstrated there is plenty of gold and other mineral in that region only awaiting development.

In the Ortiz mine grant things are looking lively. The men who have control of the Edison interest there do not say much, but it is generally known that the machinery for the intended gigantic operations on that grant by the Edison Company is being gotten ready in the East as fast as possible, and that before very long a large number of men will be finding employment in producing the yellow stuff from that immense deposit of ore.

THE COCHITI DISTRICT.

In the Cochiti district and around Bland and Albemarle things are particularly promising. Bland seems to be a trifle more favored so far as new people and prospectors are concerned, it being reported that new arrivals to that camp have averaged 10 per day for some time back. As few of the new prospectors seem to have any thought of leaving, it must be taken as conclusive evidence that the camp is in a sound, healthy condition. Most of the new arrivals are those directly concerned in mining, and as there is a large unexplored and unclaimed body of land in that vicinity yet, the prospects seem to be alluring for the prospector. Newly opened claims are very easily disposed of, but the owners seem to be inclined to hold on, knowing that time will increase the value of their properties. The Cochiti is undoubtedly the best-paying region in the Territory.

NOT A BOOM MOVEMENT.

The unusual developments, both under way and projected, are not the result of a boom; they are but the honest, gigantic stride forward of a surpassingly rich country, whose resources are beginning to be known. The latest big project is the substitution of electricity for steam as the motive power in that district. With a big dam constructed across the Rio Grande about 12 miles above the Albemarle group of mines, and an electric-power house at that point large and powerful enough to furnish power to not only the mills, but for the tramways and lighting purposes, it is plain to be seen that the Cochiti will be prosperous. The scheme is a bona fide proposition and will be carried out by Eastern capitalists at no very far distant day.

On the Albemarle group everything is humming. The pay roll of this mine already averages $16,000 per month, and that property bids fair to make a national reputation as a producer of gold. While gold commands the most attention, the silver propositions are all right, and should the price of the white metal continue to advance, prodigious production of that metal in central New Mexico would be chronicled. Opals are frequently found in this part also. In Santa Fe and more particularly Taos County, deposits of copper are being exploited with good results, and the Copper Glance mine in Taos County has been bonded to Chicago capitalists.

THE RED RIVER COUNTRY.

Up in the Elizabethtown and Red River country everything betokens a very busy summer, and, like the other mining districts of the Territory, seems to be very sanguine of pronounced and abundant success.

Every able-bodied man in that region is able to instantly command work. At the Mallette property very fine free gold specimens have been shown up, with the full expectation that the good prospects will continue. The "I Own" is undergoing considerable development. H. B. Tompkins's property on the Black Mountain, in the same vicinity, is panning out well, his shaft at 35 feet showing up a 4-foot vein of excellent ore. One of the promising claims is that of Henry Young, who has been actively at work taking out ore that assayed $500 per ton. The Anderson property at Elizabethtown is authoritatively reported as sending $100 ore to the mills. In the northern region, and, in fact, in the several mining districts of the Territory, the mining outlook for the coming season is particularly enticing, and there is no doubt but the present success will prove a great benefit as a sound advertising medium for the undoubtedly great and rich mining resources within our borders.

THE MINES OF NEW MEXICO.

[From Territorial Bureau of Immigration.]

GOLD, SILVER, COPPER, LEAD, IRON, COAL, AND ALL THE PRECIOUS AND USEFUL METALS AND MINERALS—FIELDS FOR THE PROSPECTOR AND INVESTOR IN EVERY COUNTY OF THE TERRITORY—A CLIMATE THAT AFFORDS AN OPPORTUNITY FOR THE MINER TO WORK THE YEAR 'ROUND—THE ATTENTION OF MINING MEN FROM THE NORTHERN STATES NOW BEING ATTRACTED TO THIS TERRITORY, RICH IN MINERALS, AND LARGE-SIZED INVESTMENTS ARE BEING MADE.

A vast mineral field.—Mr. J. D. Bone, a mining expert of good standing, who has a practical knowledge of the different mineral districts in the Territory, says:

"As a broad assertion, we may say the whole mountain region in New Mexico is a fair and a reasonably sure prospecting field. It is a very false idea to suppose that a few favored spots, at which development has taken place—merely little pin points on the vast area of known mineralized territory—are all, or one-thousandth part, of the great resources of our mountains.

"We do not hesitate to say that quite a promising field for prospecting would be right in the midst of any one of our oldest camps. This being true in the oldest and livest mining camps of the Territory, surely the vast fields of known mineral-bearing area have been but indifferently prospected, if indeed, at all.

"The seeker after hidden wealth has here in New Mexico a wide field, one which it is not at all improbable will exceed in value anything yet discovered. The areas most likely to produce results are where eruptive forces have been most active and the disturbances and crystallizing of the strata most pronounced.

"In this Territory, with its 122,444 square miles, are rich and inviting fields, practically untouched by the pick of the prospector, and offering the miner and capitalist opportunities for rich returns for labor and money expended, such as are very seldom found in any mining section of the great West. As good, if not better, chances are presented within the boundaries of this Territory than were found in Leadville or Cripple Creek, Colo.

"*Mining districts.*—This Territory has now some eighty-five mining districts, which are scattered widely, and cover a large section of country, thus showing that the mineral wealth is by no means confined in any one special place, but largely distributed over a great extent of territory.

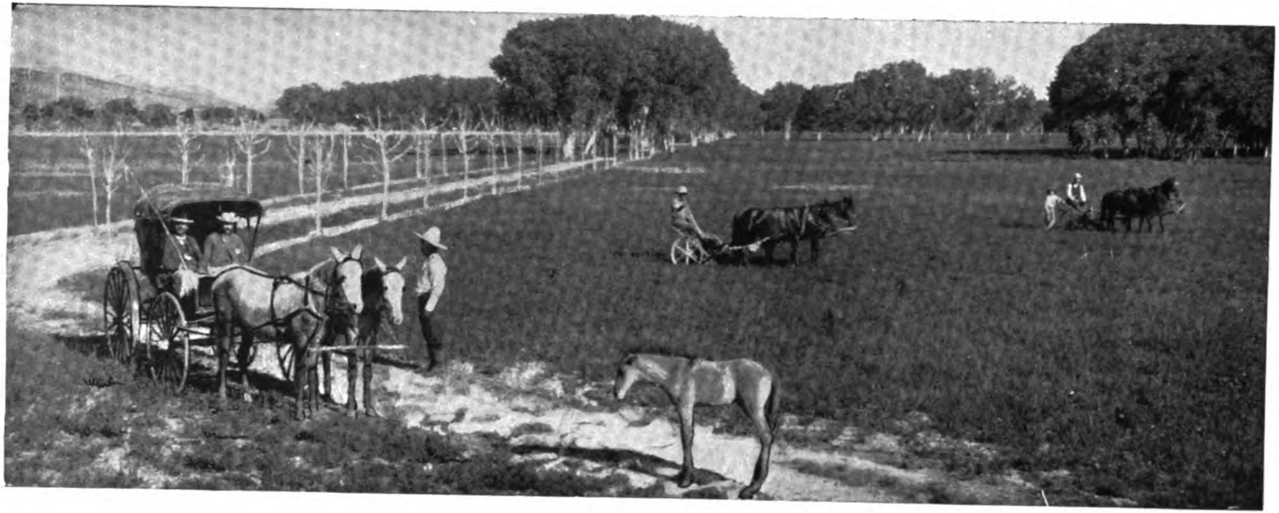
"The territory in New Mexico already more or less developed equals 30,000 square miles of mineral-bearing country, and the better developed districts of this vast extent are as rich as any exploited elsewhere in the United States, and its as yet great 'undeveloped areas' offer to the intelligent prospector and energetic man of means opportunities found in no other mining country.

"*The great mineral belt.*—By examining any ordinary map of the Western States it will be seen that all of the most valuable recent developments of minerals in southern Colorado are on a well-defined line following the Rocky Mountain system into and across New Mexico, and that that line extends through the central west and southwest portions of the Territory without a break of any considerable extent.

"That conditions along this extent of country, almost 400 miles in length, in many respects resembling the gold and silver bearing formations of Creede, Cripple Creek, Rosita, Silver Cliff, and the great San Juan country of Colorado can not be doubted, and in the coming years it is not unlikely this section of New Mexico may develop many places as productive of wealth as the above-named Colorado districts.

"*New Mexico gold fields.*—Lying just south of the great Commonwealth of Colorado, our first counties are San Juan, Rio Arriba, Taos, Colfax, and Union.

"The evidences of gold throughout San Juan are such that this county becomes attractive as a point where extensive hydraulic operations may be conducted with every assurance of success.



ALFALFA ON ALAMEDA RANCH, RIO GRANDE VALLEY.

"Passing east from this county we come to Rio Arriba, where the mineral deposits, worked to any great extent, generally take the form of placers and vast fields of coal. It would seem to us that in the vicinity of Tierra Amarilla and Good Hope would be a good and most promising prospecting field for the precious metals.

"*Rich placers.*—Near Abiquiu, along the Chama River, are gold placers that cover nearly 20,000 acres, which show a remarkable average yield of gold, and as water seems to be plentiful for most of the year, this vicinity is unexcelled as a point where large and paying mining enterprises may be conducted.

"The deep placer deposits of Taos County, along the Rio Grande, are probably the most extensive in the United States, and investigation warrants us in saying that nothing since the discovery of California and Australia is comparable for its measurable resources of gold available by the hydraulic process. Reference to the report of Prof. Benjamin Silliman, of Yale College, to the Commissioner of the General Land Office, published in 1880, will fully convince even those who are sending men and money to explore Alaska's frozen fields that right here in New Mexico—a land of perpetual sunshine—are equally rich and much more desirable gold-placer deposits. The altitude of these deep placer deposits is perhaps 7,000 feet; still, because of this locality being sheltered by the encircling mountains, and because of its more southern latitude, placer mining can be carried on quite nine months of each year and at points the entire year. These great placer deposits do not alone constitute Taos County's great undeveloped resources, for her mountains are rich in metals, as is fully shown at numerous points where there are producing gold, silver, and copper mines.

"*Quartz mining.*—The Red River country in Taos County is fast becoming known to mining men throughout the world as a district destined in a very short time to rival any one of our greatest gold-producing sections.

"At La Belle, Amizett, and other points development is being rapidly pushed, and it may be said that Taos County has fairly entered upon a bright mining future.

"To the east of this rich county of Taos lies Colfax County, a district which has produced many millions in gold, and which to-day gives brighter promise than at any time in its history. A very large proportion of the rich mineral lands of this county are comprised within the boundaries of the Maxwell Land Grant Company's property. The liberal policy pursued by this company in its dealings with the prospector is worthy of notice. The management of this grant has laid down rules very similar to those governing mineral locations on the public domain, and the property is thrown open to the prospector and miner, who can at a nominal cost acquire title and develop mining properties on the grant. The old Baldy district on this grant is a large gold producer; so also is the Ute Creek district, where is located the famous old Aztec mine, with a record of almost a million in gold. The Montezuma mine, on what is commonly known as Montezuma Hill, has produced between $200,000 and $300,000.

"There is greater activity in the west Moreno Valley district than ever before, and only 3 miles from the new but promising camp of Hematite are the world-famed Elizabethtown placers, which have produced over $200,000 in gold. Aside from these famous placers it is said that miners, in a crude way, produce large sums in gold from placer ground but little known.

"*Grand opening for prospectors.*—Little mining of the precious metals has been done in Union County, but it is not an unlikely field for prospecting for our undeveloped mineral resources.

"Passing from Union County, we next take up Mora and San Miguel counties, two sections of the Territory which seem to have been but indifferently prospected. The mountain range west of the city of Las Vegas lies directly in the gold-producing belt, and surface indications are most favorable.

"South from the city of Santa Fe, Santa Fe County, and not far from the town of Cerrillos, in a disconnected range of mountains, with perhaps an average width of 7 miles, is one of the most remarkable mineral regions of New Mexico, and we may say of the world. This range travels north and south and is known as the Ortiz Mountains. The surface indications are unsurpassed, and a number of fine bodies of low-grade, free-milling gold ores are found, among which may be especially mentioned the famous Cunningham Hill and adjoining properties near Dolores. The main western lode, especially in its southern extension, is rich in copper, as found in the workings of the Santa Fe Copper Company. This region was known to the early Spanish explorers, who, upon their advent into this country, discovered and worked the rich gravel deposits at the base of Ortiz Mountain, in and about San Pedro, Golden, and Dolores.

"*A million a year.*—An experienced and reliable expert who examined these extensive placers a few years ago reported that, 'if sufficient water were placed thereon, these placers could be made to yield $1,000,000 in gold per year for over twenty-three years.' The 'country rock,' being soft and porous, so that the vein matter lying near the surface rapidly oxidizes and the oxidized 'honeycomb' quartz remaining with its vast supply of free gold, is eroded by degrees and being carried down the slope to feed the placers below.

"*The famous turquoise mine.*—In the vicinity of Cerrillos is a small section of mountainous country, in which is located one of the world's best-known and most productive turquoise mines. There are, as near as we can learn, some sixty or seventy turquoise claims in New Mexico, some ten or a dozen in active and profitable operation.

"The output of turquoise in New Mexico, as taken from official sources, was $150,000 in 1891, $175,000 in 1892, $200,000 in 1893, $250,000 in 1894, $350,000 in 1895, and $475,000 in 1896; but it is openly asserted that the true value of turquoise mined since 1890 has been greatly underestimated. As an illustration, one of these mines sold in 1893 for $250,000, and, according to the statements of a former owner, has paid a million and a half a year since that time. One single stone taken out is reported to have been bought for $6,000 in New York.

"*Cochiti and Hell Canyon.*—Leaving Santa Fe County, we next take up Bernalillo, which has an area of 8,000 square miles, of which 5,000 square miles are classed as mineral lands. The well-known Cochiti mining district practically dates from discoveries made in 1893. Progress was retarded by title suits under old grants, but a decision favorable to the miners was recently handed down by the United States Supreme Court, and now development in this wonderful camp goes steadily forward.

"East of the city of Albuquerque some 20 miles is the Hell Canyon district, destined in the near future to attract widespread attention. The large bodies of free-milling ores disclosed in the workings of the mines are probably as extensive for amount and character and work as any in the United States. These large bodies of ores are deserving of investigation, and if operated on proper lines will produce handsome returns for many years to come. Considerable mining machinery is now being placed in the camps, and active operations will soon commence.

"In our travels south we have now come to Socorro, a country blessed with abundant natural resources, extending as it does about 170 miles east and west by 100 miles north and south, and containing over 10,000,000 acres, some sections of which have produced millions in mineral wealth. This county, which for many years past has been steadily adding to the mineral wealth of the world, stands to-day upon the threshold of a brighter future than at any time in its history.

"*A carload of bullion a day.*—Just west of Socorro City there are large deposits of lead-silver ores, but only at one point in the county is this class of ores now being mined to any great extent—in the Magdalena Mountains. Water Canyon and Copper Creek districts, west of Socorro City, are very rapidly coming into prominence as gold producers, and with the improvements now being made bid fair to rival the best-known sections of the Territory. At the town of Kelley, some 30 miles west of the city of Socorro, are located the famous Kelley mines, heavy producers of lead-silver ores. Under the able management of Capt. A. B. Fitch the Graphic mines are producing with ease sufficient ore to keep in full operation day and night the 100-ton smelter. A carload of bullion is turned out by this plant every twenty-four hours, thus making lively times not only for the many miners in and about Kelley, but every man in this section reaps a measure of benefit from this industry.

"Away to the west in Socorro County, near where the Territorial boundary line joins Arizona, is located the Cooney district, a section at one time producing high-grade silver ores, but whose mines are now being worked largely for the gold values contained in the ores.

"*The far-famed Black range.*—We have now reached the county of Sierra, wherein are located the well-known Mimbres, or Black range of mountains, which in many respects are among the most remarkable in the United States. It has been most truly said that an extent of country from San Augustine plains on the north to Cooks Peak on the south, a distance of over 120 miles, is mineralized in a greater or less degree throughout. Mines located along this mineralized belt of country have long been famed as steady producers of high-class ores of all the useful metals, including gold, silver, copper, lead, and iron. The Black range extends in a northerly and southerly direction, and is about 40 miles in width. The apex or summit of the range forms what is known as the Continental Divide. The topography of the country is such as to make any point easily accessible."

A yet undeveloped field.—A large percentage of the known mineral-bearing area of New Mexico has been but indifferently prospected—very much of it not at all. Consequently there is still here a wide field for the seeker after hidden wealth. It is therefore not impossible, or even improbable, that there are yet here quite as profitable fields untouched by the pick of the prospector as any that have been developed. There is good reason to believe that the southwesterly portions, nearly all mountainous, bordering Arizona and old Mexico, abound in all the valuable minerals equally if not beyond the northeasterly portions of the mountain areas, and that in due time, under the rigorous search of the energetic and intelligent prospector, great values will in the not distant future be developed, and to an extent and value equal, if not beyond, any that have yet been reached.

The capitalist, the miner, or prospector who decides to cast his lot here will find the foundations of a broad and enlightened society well established. They will find a generous, progressive, and liberal-minded people, ready to lend a helping hand to every comer. They will find order, society, law, and an enlightened public sentiment ruling the Territory.

"Not only the character of these deposits as given by conservative and reliable correspondents, but the accessibility and value, as shown by the daily record of output and the vast extent of the field covered, mark this as the most attractive field to the miner and mine hunter yet developed on the American continent, if not in the world.

Favorable climatic conditions.—The annual report of the New Mexico section of the United States Weather Bureau for 1897, published in Bulletin No. 1, 1898, contains valuable information in regard to the climatic conditions in New Mexico, especially to prospectors and miners, while it shows, as compared to more northerly latitudes, that the mean temperature of the mining sections of New Mexico was seldom below the freezing point and the weather was very rarely too cold for prospecting or surface-mining work. If so disposed, the miner can put in the entire year prospecting or mining, at his pleasure or convenience.

Mining claims, how located.—The bureau frequently receives inquiries asking for information concerning the manner of locating mineral claims in New Mexico and if our laws differ from the regulations prescribed by the United States General Land Office.

We can say that, in the main, the United States laws, as found in the Revised Statutes, governing the location of claims, govern also in New Mexico, the laws of New Mexico making one additional requirement relating to the locating of mines, which is set out in section 1 of chapter 25, Laws of 1889, as follows:

"That the locator or locators of any mining claim located after this act shall take effect shall, within ninety days from the date of taking possession of the same, sink a discovery shaft upon such claim to a depth of at least 10 feet from the lowest part of the rim of such shaft at the surface exposing mineral in place, or shall drive a tunnel, adit, or open cut upon such claim to at least 10 feet below the surface exposing mineral in place.

The United States laws prescribe that mining claims upon veins or lodes of quartz or other rock in place, bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits. shall not exceed 1,500 feet in length along the vein or lode; and the claim is limited to 300 feet on each side of the vein or lode. (See sec. 2320, Rev. Stat.)

Tunnels.—Where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within 3,000 feet from the face of such tunnel on the line thereof to the same extent as discovered from the surface; and locations on the line of such tunnel of veins or lodes not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall be invalid. Failure to prosecute the work on the tunnel for six months shall be considered an abandonment. (See sec. 2323, Rev. Stat.)

A Klondike at home.—The "Klondike of the Southwest" is the name frequently applied to New Mexico, and, judging from the flattering progress she has made in mining since January 1, 1898, before the end of the year the fever for the gold in the "Klondike of the Southwest" will be as high and unabating as it now is for the "Klondike of the Northwest," and in contrast and comparison producing gold against gold, railroad facilities against reindeers and dogs, food against famine, comfort and health against hardships, and happiness against misery.

Our vast natural resources.—It is no exaggeration to affirm that in point of natural resources none of the Rocky Mountain States exceed New Mexico. In addition to gold, silver, copper, lead, and zinc, coal (anthracite and bituminous), fire clay, alum, sulphur, salt, gypsum, onyx, and marble are found in large deposits. New Mexico supplies the world with turquoise.

GYPSUM.

In south Santa Fe County, in the county of San Miguel, and in several other places in New Mexico are to be found large deposits of this mineral. In Doña Ana County, on the San Augustin Plains, there exists the largest deposit of gypsum known in the world, of an exceedingly pure character. The location of this deposit is unique. The San Augustin Plain is about 150 miles in length from north to south and from 30 to 60 miles from east to west. Near White Oaks, in Lincoln County, in the midst of this plain, is the crater of an ancient volcano, the lava from which has flown in a southerly direction like a stream of water for a distance of 60 or 70 miles, varying in width from one-half to 3 miles. At the southern end of this stream of lava there is a small stream of salt water flowing into a salt lake, about 1 mile in width and 1½ miles in length. At the southern end of this lake the bed of gypsum begins and extends in a southerly direction down the center of the plain, adjoining what appears to be an ancient river bed, almost without a break for a distance of 50 miles. The gypsum bed varies from 5 to 20 miles in width. It is granulated in character, white as the driven snow, and seems to be piled up on the plain like snowdrifts, requiring no labor for mining or for handling. I can not more accurately describe its appearance than by comparing it to granulated sugar. If you should take granulated sugar in one hand and the gypsum in the other it would be difficult to tell one from the other by sight or touch. The body of the gypsum stands from 10 to 40 feet above the surrounding plain, and the line is as distinctly marked as the sand upon the ocean beach.

CARBONATE AND SULPHATE OF SODA.

Immediately adjoining this extensive deposit of gypsum upon the west, and in what is apparently the bed of an ancient river or lake, exists a deposit of carbonate and sulphate of soda, carrying about 15 per cent of carbonate of soda, 20 per cent of sulphate of soda, 4 per cent of borax, the remainder being mostly moisture and sulphate of lime. This deposit is about 1 mile wide and 5 miles in length. Its depth is unknown. At from 2 to 4 feet below the surface water is encountered, which is largely impregnated with these minerals and with chloride of sodium. Explorations have been made in several places throughout the deposits, by driving down tubes to a depth of from 20 to 30 feet, without discovering any change in the character of the deposit.

There is also a considerable deposit of carbonate of soda near Manzano, in the county of Valencia, and near Wagon Mound, in the county of Mora.

KAOLIN AND FIRE CLAYS.

These valuable minerals have been found in considerable quantities in several places in the Territory. The most notable deposit of fire clay worked to any considerable extent is situated near Socorro, in Socorro County. There has been a recent discovery of a large deposit of kaolin and fire clays in the suburbs of Santa Fe of superior quality. Efforts are now being made to utilize these clays at the

Territorial prison. In the immediate vicinity there is also found a considerable bed of graphite, and it is hoped that in the near future it will be extensively worked.

ALUM.

A large deposit of alum has been opened on the Gila River. It is reported to be of great commercial value, and is now being worked to some extent. With proper railroad facilities these alum beds and the beds of gypsum and soda heretofore referred to would become the most productive properties in the Territory.

PRECIOUS STONES.

In describing the mineral resources of New Mexico the native precious stones are worthy of mention, as they are steadily rising in popular estimation and production.

Traditionally this Territory has been noted as having produced some remarkable gems, and recent developments are proving the older records to have been correct. It is only recently that scientific research and skilled labor have been directed to this purpose. The result is a steady increase of expert prospecting and labor in development, which, though only fairly begun, has resulted in finding many varieties of precious and semiprecious stones.

The estimated production and value of gems up to the year 1890 can be found in the census reports of that year. It is worthy of remark that the amount and the value thereof are understated, the facilities for correct and full information being limited.

Since that time the annual product has more than doubled, and is still increasing. Diligent prospecting has revealed new deposits, and the industry bids fair at present to become a large item in the economic resources of the Territory.

The gems found in New Mexico, in the order of their value, are emeralds, there being one now cut in Santa Fe which weighs 1 karat and is of fine quality. Many other smaller ones have been found, although no expert search has been made for them thus far. A very recent find, next in value, is a gem resembling the ruby in respect of color, brilliancy, and hardness. Of these, quantities are found frequently associated with peridots and garnets, but differing from the latter in being harder and of a different specific gravity and form of crystallization. The range of color is from a light rose or pink to that of a bright red garnet. Though no very large ones have been found, yet gems cut from those found have sold at $20 to $50 each, while their numbers and merits have made them a decided acquisition to the list of precious stones of New Mexico, which must, when more widely known, create for them a large demand.

The turquoise deposits of the Territory are too well known to require an extended description. It is only necessary to state that while some of these gems have been famed in Europe for centuries, yet in the United States they have never met the appreciation their merits and rank as gems deserve until the last few years. Now they are in great demand, having been pronounced by experts equal, if not superior, to the Persian turquoise. There are single gems from Santa Fe County, now in New York, held as high as $4,000, and some in Santa Fe of nearly equal size and quality.

This sudden appreciation has given a stimulus to further research, resulting in finding large turquoise deposits near Silver City, in the Hatchitas and Cow Spring mountains, of great merit. One of the new discoveries is phenomenally large, considering quantity of production, size and color of stones found in it.

In addition to the above named are found native euclase, the so-called Montana sapphires, garnets, milk and fire opals, peridots, a great variety of fine agates, besides petrified woods, fit for inlaying, mosaic work, or jewelry. Gold and silver quartz, valuable for fine work in jewelry, are produced from various mines.

COAL.

Chief among them is that of coal, of which there are large beds of bituminous situated in nearly every county in the Territory, and an extensive body of anthracite coal near Cerrillos, in southern Santa Fe County.

WEALTH IN SULPHUR.

BEDS CLOSE TO A PECOS VALLEY STATION.

The following article on the sulphur beds lying just west of Guadalupe, on the Pecos Valley road, is taken from the El Paso Herald. A number of Eddy parties are interested in the deposits, having been engaged for some time in investigating them. During the past two months E. Miall Skeats, of this city, has spent considerable time there, and The Argus believes that he is very sanguine of the results. The article from the Herald is as follows:

"One of the greatest sources of the as yet undeveloped mineral wealth of El Paso County lies in the extreme northeastern portion of the county, and is in the form of almost limitless deposits of nearly pure sulphur, easily accessible, and requiring but little capital (chiefly for refining works) to place it on the market as a finished product. These deposits fill numerous patelliform basins or craters of extinct volcanoes on the plains southeast of the southern point of the Guadalupe Mountains, beginning 2 to 3 miles south of Delaware Creek and 12 miles west of Guadalupe Station, on the Pecos Valley Railroad. So far they are known to exist on some twelve or fourteen sections of land, and are believed to extend over many more, though but twelve claims have been located, and these but superficially prospected by shafts usually from 12 to 15 feet in depth, only one being as deep as 30 feet, and all these in nearly pure sulphur to the greatest depth attained. The region roundabout might be called a prairie, though dotted here and there with low hills overgrown with scrub cedar and covered with the finest grasses. Numerous springs of pure water exist in the vicinity, and Tinnin's great spring ranch lies 6 miles south.

"These basins or craters are usually from 600 to 700 feet in diameter, and toward the center it declines to a depth of 3 or 4 feet, the surface being a thin covering of blackened earth, strongly impregnated with sulphur, and presenting the appearance of having been blackened with sulphuric acid. In one shaft, sunk in the hope of striking water, a liquid was encountered at a depth of 15 feet, but on being tasted it proved to be very strong sulphuric acid, and when the taster hurriedly ejected it from his mouth, adulterated with saliva as it was, it stained deeply and did some injury to his coat sleeve. It is believed, however, that this acid is small in quantity, detained by some solid rock basin, and that it was formed by percolating rain water taking sulphur in solution as it descended.

"As indicating the process by which these vast masses of sulphur were deposited, time has left no trace. As the country roundabout is gypsum, it might be inferred that both minerals were deposited from sulphur springs, or springs containing sulphide of hydrogen, which sometimes deposits sulphur by the partial oxidation of the hydrogen and gypsum by the more complete oxidation of the hydrogen. Such springs flowing into a basin lake then covering the region would pour limitless quantities of sulphide of hydrogen (only partially oxidized) down the craters of extinct volcanoes, thus ultimately filling them with sulphur to unknown and probably very great depths, while the impregnated water spread out in the shallow lakes would become more completely oxidized and deposit the gypsum beds now found surrounding the craters. Or, as the craters of extinct volcanoes (as in the case of Popocatapetl) are frequently found plugged with sulphur, it may be that this mineral, in a sublimated state, arose from great depth and was precipitated on the lips and walls of the crater until the orifice was filled. But, whatever the process of deposition may have been, it is certain that these deposits of sulphur are of such vast extent and purity that El Paso is destined to rival the famous sulphur deposits of Sicily, from which island the United States alone formerly imported $50,000,000 worth of sulphur annually.

"Near the surface of the basins in question, where more or less earthy matter has become mixed with the mineral, and even pebbles of foreign rock are embedded, the mass shows only about 60 per cent sulphur, but deeper down the sulphur is found almost pure (98 per cent) and in massive beds, finely lined with varying colors and resembling the finest yellow clay. Twelve different companies have already treated and partially prospected claims, and one of these companies has projected a railroad from Guadalupe Station, on the Pecos Valley Railroad, to the mines, there being already a fine wagon road to the south, extending 30 miles west from the Pecos Valley road. As these deposits are numerous, doubtless of great extent or depth, and are known to be exceedingly rich, the field is an inviting one for prospectors and small capitalists. The material can be mined and refined at little cost, and can be marketed at wholesale at $32 per ton for roll and $33 to $35 per ton for flour."

SANTA FE THE NATURAL CENTER OF MINING OPERATIONS IN NEW MEXICO.

[From Santa Fe Daily New Mexican.]

The New Mexican has the satisfaction of exclusively publishing the first map showing the numerous mining districts naturally tributary to Santa Fe, N. Mex., ever placed before the public. It was drawn and engraved expressly for use in these columns, and will be found accurate, complete, and instructive. It is deserving of careful study on the part of everyone interested in the future growth and prosperity of the capital city and the localities immediately environing it. Especial attention is called to it in detail.

MANY FACILITIES.

It will be observed in the first place that Santa Fe is the only city in this region that enjoys the advantages inevitably accruing from location on two competing railroad lines, the great Santa Fe system affording it direct rail communication with the East, West, and South, and the Denver and Rio Grande Railroad connecting it directly with northern New Mexico and Colorado and all points in the East, West, and South, and thus in one important respect at least its transportation facilities are superior to those of any other city in New Mexico or Arizona. Right here it should be noted that it is located on two rival express lines reaching all parts of the country; offers a choice between two competing telegraph lines with all quarters of the globe, and is soon to be brought into close communication with all the principal cities and towns of Bernalillo, San Miguel, Mora, Colfax, Taos, and Rio Arriba counties by means of projected telephone lines. It is also connected with all the tributary mining districts by an excellent system of wagon roads.

NEW PLACERS DISTRICT.

A few miles southwest of Dolores is situated the extensive New Placers mining district, which comprises the numerous rich gold and silver-bearing lode claims in the hills around Golden and in the neighboring Tuerto Mountains; the great gold, silver, and copper mines around San Pedro, 2 miles farther south, and several miles of pay placer ground. This district unquestionably holds values to the amount of millions of dollars, and as development work is prosecuted the showing constantly improves. Two groups of copper mines near San Pedro, known as Santa Fe No. 1 and Santa Fe No. 2, embracing 16 patented claims, were recently transferred to the Santa Fe Gold and Copper Mining Company for a consideration estimated to be equivalent to $750,000.

COPPER AND MICA.

Northwest and north of Santa Fe, in Rio Arriba County, are deposits where large kidneys of almost pure copper have been found on the surface and big bodies of good copper ore are known to exist, the promising Headstone mining district east of Tierra Amarilla, the valuable mica mines west and south of Tres Piedras, now being operated by a strong Colorado Springs company, and over 1,000 acres of pay placer lands extending up the Chama River from Abiquiu and including much of the adjacent mesa land as well as the river bed.

TAOS COUNTY WEALTH.

East of Rio Arriba and north and northeast of Santa Fe is fruitful Taos County, which is traversed by the Santa Fe division of the Denver and Rio Grande Railroad, and is reached from this city by good wagon roads. In this resourceful county are found the Ojo Caliente mining district, the copper-mining district east of Embudo, the Amizett gold and silver mining district east of Tres Piedras, and the cluster of rich gold districts north and northeast of Taos, known as the Rio Hondo, Keystone, La Belle, and Red River districts. Farther east, in Colfax County, are the profitable gold mines of the well-known Elizabethtown and Baldy districts, and the mines near Cimarron. The mines in all these districts are undergoing systematic and extensive development work, and many of them are realizing their owners steady yellow profits at the mills and smelters.

A NEW DISTRICT.

Immediately east and northeast of Santa Fe is the Pecos River forest reservation, partly in this county and partly in San Miguel County. This reserve covers a section of the rugged Santa Fe range of mountains, in which are found many promising surface indications of gold, silver, copper, iron, and coal, and it is confidently believed that the development work now in progress will soon disclose much pay material. Copper, iron, mica, and coal that burns readily have been discovered on the surface within 2 or 3 miles of this city. A large body of fire clay of superior quality has been opened about 2 miles northeast of Santa Fe, and it is now supplying the penitentiary brick-making plant with much of the clay used. Several lode claims, carrying gold quartz nearly resembling the Cochiti quartz in appearance, are being opened on the eastern slope of the Santa Fe range, about 14 miles east of this city.

THE NATURAL CENTER.

From this brief sketch and the excellent accompanying map, it will be perceived that the capital city of New Mexico is so fortunately located that it ought to command the trade of nearly all the mining districts of the large and resourceful region indicated, besides the steadily increasing volume of business incident to its being the official and political center of the Territory.

CERRILLOS DISTRICT.

It will be observed that the Cerrillos mining district is located in Santa Fe County, nearly south of this city, and is reached by railroad as well as by good wagon roads. It is quite extensive and remarkably varied in its mineral resources. It embraces the famous turquoise mines of Tiffany and others at Turquesa, about 18 miles south of this city; the promising gold, silver, lead, and zinc mines around Cerrillos, about 12 miles farther south, and the immense anthracite and bituminous coal measures at Madrid, a mile or so farther south and west.

OLD PLACER DISTRICT.

Then come the rich and extensive auriferous placer deposits and mountains of gold-bearing quartz in place in the Old Placer mining district, which embraces Dolores and the 57,000 acres of richly mineralized land known as the Ortiz mine grant. These ledges and placer deposits have been worked for several hundred years and have yielded several million dollars in gold. The Ortiz mine grant has been sold to a powerful syndicate headed by Thomas A. Edison, and the world-renowned inventor expects soon to demonstrate the practical utility of what he regards as the crowning invention of his life by rescuing the gold from the sand, gravel, cement, and quartz of this grant by means of an electrical process of his own and without the aid of water. The perfection of his experimental plant is now well under way. After thoroughly testing the appliance, the success of which is not doubted, reduction works of mammoth proportions will be constructed.

COCHITI DISTRICT.

W. C. Wynkoop, manager of the Cochiti Reduction and Improvement Company at Woodbury, 6 miles below Bland, has a very interesting illustrated article in the Engineering and Mining Journal of recent date on the Cochiti mining district, which is of importance and of great interest because it is written by a mine expert who is thoroughly familiar with the district and its resources. Mr. Wynkoop says:

> The Cochiti district, New Mexico, is a comparatively new mining district, situated in a direct line 35 miles due west from Santa Fe in the Jemez range of mountains. The mines are located on the eastern slope at an elevation ranging from 7,500 to 8,000 feet. The known good ore-bearing veins are confined to an area about 3 by 4 miles in extent, though veins, which so far as known, are barren of good ore, are found on every side outside of the small producing area. Three parallel canyons about 1½ miles apart, having a general range slightly west of north, extend through the district. They are from 500 to 800 feet in depth and are bounded by vertical cliffs or precipitous sides. The topography gives good opportunities to study the geology of the region. All the country is volcanic, and the prevailing rock is porphyritic andesite. In few places is it undisturbed; generally it is brecciated or a conglomerate. Nowhere in the region are the underlying rocks visible; local authorities say the overflow took place at about the close of Jura-Trias; Bandolier says the underlying rocks are Cretaceous, but I am inclined to think, without any other basis for the opinion than their correspondence with the similar and near-by rocks of the San Juan region in Colorado, that they are Tertiary; this, too, is the age ascribed to them by the ethnologists, who are just now deep in a discussion trying to demonstrate that man lived on earth during the Tertiary age, basing their claims on evidence of human work found in volcanic rock in this region.

There are at least two volcanic overflows here, the older one is the andesitic, and it is in this only that the veins are found; the younger one, covering the andesite, is tufa, and is very modern. It is in this that evidences of human life are claimed to have been found. The ethnologists, I think, have made an error by ascribing this later rock to the wrong age. Among other evidences of the late deposition of the tufa is the fact that it is found covering old water channels, filled with water-worn bowlders and ore float, clearly derived from the disintegration of the andesites and their accompanying rocks.

In the upper, or portion of the district nearest the range, the tufa has been mostly eroded, but in the lower portions it still caps some of the mountains, covering the veins which outcrop on the mountain sides below. After the deposition of the andesite the country was faulted and fractured and dikes were formed, and there were considerable changes of elevation, while denudation formed deep sedimentary deposits, which extend easterly to the Rio Grande River, 15 miles distant. The periods of elevation were gradual and extended over long periods of time, until a late one, which was probably contemporaneous with the tufa overflow, which was rapid, as geological time is measured.

The dikes are generally of a soft, gray, acid porphyry, with occasionally one of diorite or trachite. Following the first period of dike formation there was a second one, the dikes of that period following the first and adjoining or cutting them. The second series are smaller than the first, and are composed, so far as I have seen, of basalt or phonolite. Running parallel to and within a few feet of the main dikes are many small veins of white quartz barren of ore. The largest dikes are about 100 feet in width, narrowing in places to a few feet and again widening to more than 100 feet. All of them throw off spurs running at acute angles to the main dike, and extending hundreds or even thousands of feet. The ore is entirely a replacement of the dike material. In some places the replacement has been complete and in others partial. In the latter the replacement may have been all adjoining one wall or in streaks or pockets or bodies anywhere in the vein. Porphyry "horses" are found in all the workings, and frequently chunks of quartz will be found to have a core of porphyry around which the ore is deposited in streaks, forming handsome samples of banded structure.

The quartz deposits are peculiarly characterized by fracture planes (having no better name for them) parallel and from a few inches to a couple of feet apart, which run almost at right angles to the strike of the veins. Sometimes these planes form very distinct boundaries to the ore. Rich or pay ore will be cut off by them, the rock adjoining being barren; at the next, or some other plane, the ore may reappear as suddenly as it disappeared. These barren spots sometimes extend for a distance of 100 feet or more. Practically all of the ore of the district carries from 85 to 95 per cent silica. Siliceous rocks characterize the entire region. Opals (mostly wood, but occasionally a precious one), chalcedony, and brilliant but small quartz crystals are abundant.

Analysis of the ore shows it to be an arsenical pyrite, though the amount of sulphur and arsenic present is very small, generally 1 to 2 per cent of the former and from a trace to 0.5 per cent of the latter. Copper and lead are found only in traces. Manganese is occasionally plentiful, but does not appear to be a constituent of the good ore. Antimony is more rarely found and is always an accompaniment of high values. The ore of smelting grade, ranging in value from $30 to $50 or more per ton, is generally found in lenticular bodies extending longitudinally from a few to 100 feet or more and vertically the same distances. These pay streaks vary in thickness from a few inches to 10 feet and are often so solid that the ore requires no sorting. Generally the low grades are formed by the dissemination of specks of high grade through an otherwise practically barren quartz. All of the ores carry gold and silver, the relative proportions varying in different properties. On the vein which I have been developing the values are 60 per cent silver (valuing it at 60 cents per ounce) and 40 per cent gold, though it is not unusual to find places where the value is almost entirely gold. In a few properties gold largely predominates. The quartz, as might be expected from its composition, is exceedingly hard and costly to drill, but as a rule it breaks big, and the deposits are so large that it can be mined cheaply, notwithstanding the difficulty in drilling. Its hardness is less of a difficulty in mining than in milling, where in crushing it becomes a great consumer of steel. Most of the veins outcrop prominently, occasionally forming cliffs of quartz from 20 to 50 feet high.

The Albemarle mine, belonging to the Cochiti Gold Mining Company, is the best-developed mine in the camp. It has reached a depth of little less than 700 feet and is opened by seven levels extending and opening the vein for 1,000 feet. The width of the vein above the sixth level varies from 40 to 65 feet. Almost the entire dike material for about 800 feet longitudinally and from the third to the sixth level is replaced with quartz, averaging about 40 feet wide. I am told by the manager at the mine that it will average $7.50 per ton. On the seventh level the vein has narrowed to from 10 to 20 feet between walls, and it is said the ore has increased in richness. The company has a cyanide mill erected at the mine, with a daily capacity of 300 tons. It is constructed entirely of steel and iron, and was erected by the Gillett-Herzog Manufacturing Company, of Minneapolis, Minn. The sizes of the buildings are: Crushing building, 76 by 100 feet; engine and boiler room, 40 by 62 feet; one leaching room, 68 by 112 feet, one 60 by 174 feet, and one 42 by 70 feet. The ore, when dumped into the mill, passes over grizzlies, the fine stuff being crushed in Huntingtons to 50 mesh, and treated in Pelatin-Clerici pans. There are three 6-foot Huntingtons and eight Pelatin-Clerici pans in use. The crushing machinery consists of two Blake 9 by 15 inch rock breakers, four sets of rolls 16 by 36 inches, four sets 12 by 20, furnished by the E. P. Allis Company, of Milwaukee, and two sets 16 by 36 inches, furnished by the F. M. Davis Iron Works, of Denver. The ore is screened to 24 mesh. In the leaching rooms there are 12 round iron tanks, 25 feet diameter, with capacity of 120 tons each; eight rectangular tanks, 25 by 30 feet, with a capacity of 200 tons each; six round wooden tanks, 18 feet in diameter, with a capacity of 70 tons each. The depth of each of the tanks is 6½ feet. The saving is reported to be about 80 per cent of the total values.

The mine is equipped with an electric plant, both mill and hoisting works being operated by electric motors. The dynamos are located at the Madrid coal banks, 31 miles distant. The plant does not work well, giving almost daily trouble; this is the common report. Water power in abundance is found on the Rio Grande River, 11 miles distant in a direct line, but after investigating it Mr. F. W. Hart, the engineer who erected the plant, decided to use steam instead of water to furnish the initial power.

The Lone Star, at Bland, is the next best developed mine in the district. It is opened by adit levels for about 1,000 feet, and to a depth of 800 feet below the highest outcrop. A crosscut tunnel 1,000 feet long has just been completed to the vein. The mine has blocked out approximately 150,000 tons of ore, having an average value of about $8 per ton. This property has shipped about $60,000 worth of ore carrying $40 per ton. The vein varies in width from 50 to 100 feet.

The Washington adjoins the Lone Star on the south. It has been opened by a shaft to a depth of 300 feet, and has some hundreds of feet of levels. It has shipped several carloads of ore containing over $100 per ton and has considerable ore in sight, though not blocked out, which samples from $10 to $20 per ton. The mine belongs to an Albuquerque company and is not worked.

The Crown Point is situate about one-half mile to the north of the Lone Star and is generally believed to be a spur from the great vein. It is opened by a shaft approximating 300 feet, with several hundred feet of levels. The vein varies in width from 3 or 4 to 10 feet. The ore is found in pockets rather than lenses. The values are mostly gold. It has shipped probably $75,000 worth of ore and has considerable in sight which samples from $8 to $20 per ton.

The Iron King, adjoining the Lone Star on the north, is the first discovery in the district. From a great cliff, forming a quarry where the discovery was made, 102 tons of ore were shipped which sampled $14.40 per ton. The mine is developed by some hundreds of feet of adit levels and a shaft 100 feet deep, from which levels are now running.

These are the only developed properties in the district, though there are many prospects having 100 feet or less development. Some of these show ore samples from $8 to $20 per ton. In two of them the values are almost entirely gold, which amalgamates well.

At Bland, the principal town of the district, there is a small mill with 10 stamps, two Pelatin-Clerici pans, and a couple of leaching tanks. It was erected and run as a stamp mill some years ago, with poor results, and has passed through various process changes. It has been lately purchased by the Navajo Mining Company, the owner of the Lone Star, and has been used by it as a test mill to determine the best method of treating the ore. This company announces that it will this year erect a cyanide leaching mill, with a daily capacity of 300 tons, crushing wet with stamps, using the Butters-Mein distributers, following the South African practice. It is claimed that their tests show a saving of 90 per cent.

The Cochiti Reduction and Improvement Company, operating the Iron King, had a mill at Woodbury, 6 miles below Bland, until a few days ago, when it was destroyed by fire. It was a pan amalgamation mill, developed from a process plant erected on the ground in 1894, which proved a failure. It fell to my lot to work out a plan for utilizing it, which I did by a plant that, so far as I know, has not been used elsewhere. Treating the ore by raw amalgamation, I was able to save upward of 70 per cent; treating it after roasting, the saving was considerably better. The plan developed was to crush to 30 mesh in rolls, pulverize in Alsing continuous feed and discharge cylinders to 100 mesh, when it was charged into ordinary 5-foot combination pans. The charge was 2 tons to the pan. Twelve pounds of sodium chloride were added to the charge, steam turned in, and the charge run thick. Caustic soda was added until the reaction was alkaline, when 150 pounds of quicksilver were added. In a few minutes 2 pounds of potassium cyanide were added and an electric current turned on.

A low amperage dynamo was used, iron forming the anode and the quicksilver the cathode. All ores were sampled when crushed through the ordinary pipe sampler, and samples were taken from the settler discharge every fifteen minutes. The water was decanted from the sample and evaporated to dryness, the residues assayed, twelve half-ton samples being taken for assay. The samples after decantation were also assayed, and from other samples the entire water was evaporated without decantation. This was for the purpose of locating the losses, and they were found to be almost entirely in the pulp instead of in solution. The saving varied from 84 to 96 per cent.

The greatest obstacle to the development of the district is scarcity of water for milling purposes. The Cochiti Gold Mining Company's great mill can hardly run to full capacity for more than nine months of the year on account of scarcity of water during the dry season. There is an abundance of water in the Rio Grande, 15 miles distant by road, and a railroad would make it practicable to carry the ore to the river. The Cochiti Reduction and Improvement Company has an abundance of water for a large mill, which it controls by prior appropriation.

Pine and spruce timber are fairly abundant, lumber costing $15 per 1,000, wood $2.50 to $3.50 per cord, according to place of delivery, and mine timbers for square sets 9 cents per running foot. All other supplies are sold at about the same price they bring in favorably located mining camps.

MINING LOCATIONS.

THE LAW OF NEW MEXICO CONCERNING THE LOCATION OF CLAIMS.

This office is constantly in receipt of letters from different parts of the country making inquiry regarding the law of New Mexico upon the location of claims in this Territory, and I take pleasure in giving the following for the information of those who desire it:

Under the law, page 588, Compiled Laws of New Mexico, to locate a mining claim upon a vein or lode or quartz or other rock in a place bearing gold, silver, etc., the person locating said claim must distinctly mark the location on the ground so that its boundaries may be readily traced, and post in some conspicuous place on such location a notice in writing, stating thereon the name or names of the locator or locators, his or their intention to locate the mining claim, giving such description thereof by reference to some natural object or permanent monument as will identify the claim; and also within three months after posting such notice he or they shall cause to be recorded a copy thereof in the office of the recorder of the county in which the notice is posted. Within ninety days from date of location the law says a discovery shaft shall be sunk on said claim to a depth of at least 10 feet from the lowest part of the vein of such shaft at the surface, exposing mineral in place, or shall drive a tunnel, adit, or open cut on such claim to at least 10 feet below the surface, exposing mineral in place. In estimating the worth of labor necessary to be performed to hold a mining claim the value of a day's labor is fixed by law at $4, and eight hours of labor actually performed shall constitute a legal day's work.

And within one hundred and twenty days from the date of locating any claim within this Territory the surface boundaries of such claim

Public Plaza, Santa Fe, N. Mex.

San Juan Vegetable Bouquet.

shall be plainly marked by eight substantial posts or stone monuments, each projecting at least 3 feet above the surface of the ground, to wit, one at each corner of said claim, and one at the center of each end and side line thereof, each of which posts or monuments shall be plainly marked so as to show the name of such claim and the direction thereof from each post or monument.

MINE INSPECTOR FOR THE TERRITORY OF NEW MEXICO.

SILVER CITY, N. MEX., *August 11, 1900.*

SIR: In compliance with section 3 of an act of Congress approved March 3, 1891, entitled "An act for the protection of the lives of miners in the Territories," I herewith beg leave to submit the eighth annual report of this office, covering the fiscal year ended June 30, 1900.

JOHN W. FLEMING,
United States Mine Inspector for the Territory of New Mexico.

HON. MIGUEL A. OTERO,
Governor of the Territory of New Mexico, Santa Fe, N. Mex.

BERNALILLO COUNTY.

W. A. CLARK COAL MINE.

[W. L. Bretherton, agent.]

This mine is located about 5 miles west of the town of Gallup, Bernalillo County, N. Mex. Owned and operated by W. A. Clark. Kind of coal, lignite; thickness of vein, 5 to 7 feet; total output for fiscal year ending June 30, 1900, 90,050 tons; estimated value of output, $124,269; length of slope, 3,000 feet; value of improvements this year, $17,000; average number of men employed outside, 35; average number of boys employed outside, 3; average number of men employed inside, 190; average number of boys employed inside, 10; where coal is marketed, New Mexico, Arizona, and California; number of days mine worked, 290; number of tons of coal used at mine, 1,900.

This mine also produced 6,250 tons of fire clay, which is of an excellent quality, and is shipped to Jerome, Ariz., where it is used for furnace lining in the copper furnaces at that place.

This mine is situated on a spur connecting with the Santa Fe Pacific Railway, about 4 miles west of Gallup station. Is operated by a slope 3,000 feet in length and has a capacity of 1,000 tons per day. This property consists of 1,280 acres of coal land, which carries several seams of coal, only one seam being worked at present. The workings are dry and free from gas or fire damp. The coal is a soft lignite, good for steam and domestic purposes.

This mine shows an increase in production of 43,064 tons, an increase of 135 men employed, an increase of 20 days more worked, and 1,500 feet increase in length of slope over that of the fiscal year ending June 30, 1899.

This mine is excellently equipped with first-class electrical appliances and with modern mining machinery. On my last visit to the mine it was ventilated by air shafts from the vein of coal to the surface, but a new air shaft has been sunk on the mine and connected with the underground workings and a new fan has been ordered. Just as soon as the fan arrives at the mine it will be erected, as I was informed by the agent on June 19, the date of my last visit to this mine. I was informed that the fan which was ordered would have a capacity of 100,000 cubic feet per minute. When this fan is erected it will greatly improve the ventilation throughout the workings of the mine.

RECORD OF INSPECTION.

September 26, 1899.—On this date I was engaged in inspecting the mine known as the W. A. Clark mine. I measured 6,980 cubic feet of air entering the mine per minute and measured 7,140 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

November 9, 1899.—On this date I again inspected the mine known as the W. A. Clark mine. I measured 10,960 cubic feet of air entering the mine per minute and measured 12,310 cubic feet of air returning per minute. I found the workings of the mine well ventilated and found the working places well timbered and in good condition.

January 8, 1900.—On this day I again inspected the mine known as the W. A. Clark mine. I measured 6,600 cubic feet of air entering the mine per minute and measured 6,820 cubic feet of air returning per minute. I then inspected the workings of the mine and found the rooms on the first east entry driven too far in advance of the air and ordered crosscuts driven between the rooms. Otherwise I found the mine in good condition.

March 15, 1900.—On this day I again inspected the mine known as the W. A. Clark mine. I measured 11,880 cubic feet of air entering the mine per minute and measured 12,620 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found some of the rooms driven too far without having crosscuts driven between them. The underground workings of this mine are quite extensive, and I ordered Mr. Bretherton to erect a fan on the mine.

April 17, 1900.—On this day I again inspected the mine known as the W. A. Clark mine. I measured 6,780 cubic feet of air entering the mine per minute and measured 6,900 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

May 9, 1900.—On this day, early in the morning, it was rumored in the town of Gallup that there was powder stored in the W. A. Clark mine, and I immediately went to the telegraph office and sent the following dispatch to the manager of the W. A. Clark mine, which is located at Clarksville, N. Mex.

GALLUP, N. MEX., *May 9, 1900.*

W. L. BRETHERTON, *Agent, Clarksville, N. Mex.:*

It is rumored here that there is powder stored in the coal mine which you are manager of, known as the W. A. Clark mine. If any powder is stored in the mine have it removed at once. Answer.

JOHN W. FLEMING,
United States Mine Inspector.

To the above dispatch I received the following reply:

CLARKSVILLE, N. MEX., *May 9, 1900.*

J. W. FLEMING,
United States Mine Inspector, Gallup, N. Mex.:

We always have stored our powder in a magazine, but just keep a little in the mine for daily delivery. Let me know if this is dangerous.

W. L. BRETHERTON.

I immediately sent the following dispatch to Mr. Bretherton:

GALLUP, N. MEX., *May 9, 1900.*

W. L. BRETHERTON,
Clarksville, N. Mex.:

Your telegram received. I consider it dangerous to have any powder stored in the mine, and have it removed as soon as possible.

JOHN W. FLEMING,
United States Mine Inspector.

May 10, 1900.—On this day Mr. Bretherton drove into the town of Gallup and informed me that the powder had been removed from the mine.

May 12, 1900.—On this date I again inspected the mine known as the W. A. Clark mine. I measured 13,860 cubic feet of air entering the mine per minute and measured 11,310 cubic feet of air returning per minute. The discrepancy between the intake and the outcast was caused by some of the air escaping through an old shaft on the east workings of the mine, which I ordered closed. I found several rooms on the first east entry driven up too far without having crosscuts driven between them, and ordered crosscuts driven between the rooms so as to cause the air to circulate up to the face of the workings. I also found considerable dust on the slope and entries and ordered Mr. Bretherton to have the slope and entries wet down and allow no dust to accumulate in the mine. I also took particular care to examine the place where the powder had been stored in the mine and found that the powder had been removed from the mine on May 9. A new air shaft is being sunk on this mine and when the shaft is connected with the underground workings a fan will be erected at the top of the shaft. Mr. Bretherton also informed me that he had ordered pipe for the purpose of laying a pipe line through the workings of the mine and would have it so arranged that hose could be attached every 100 feet along the pipe line, to be used for sprinkling all places where there was any dust.

June 19, 1900.—On this date I again inspected the mine known as the W. A. Clark mine. I measured 5,280 cubic feet of air entering the mine per minute and measured 5,620 cubic feet of air returning per minute. The air shaft of which I made mention in my report of May 12 is now connected with the underground workings, but the fan which is to be erected on this air shaft has not yet arrived, and Mr. Bretherton informed me that the fan would be erected just as soon as possible after its arrival at the mine.

OTERO MINE.

[Alex. Bowie, general manager; John Stewart, superintendent; James W. Bowie, mining engineer.]

This mine is located about 2½ miles in an easterly direction from the town of Gallup, Bernalillo County, N. Mex., and is owned and operated by the Caledonian Coal Company, of Gallup, N. Mex. This mine is situated on a spur about 1 mile in length, connecting with the Santa Fe Pacific Railway near Gallup station; is operated by a slope 1,400 feet in length, and has a capacity of 800 tons per day. Since my previous visit to this mine, on June 15, 1900, the company has reported the erection of a new 12-foot Crawford & McCrimmon fan, made by the Crawford & McCrimmon Company, of Brazil, Ind. Kind of coal, lignite; thickness of vein, 4 feet 6 inches; total output for fiscal year, 89,000 tons; estimated value of output, $139,724; value of improvements this year, $1,500; number of tons of coal used at mine, 500; average number of men employed outside, 30; average number of men employed inside, 150; average number of boys employed inside, 3; where coal is marketed, Santa Fe Pacific Railroad, Santa Fe, Prescott and Phoenix Railroad, and California; number of days mine worked, 280.

RECORD OF INSPECTION.

September 28, 1899.—On this date I inspected the mine known as the Otero mine. I measured 9,540 cubic feet of air entering the mine per minute and measured 11,340 cubic feet of air returning per minute. I found the workings of this mine well ventilated and in good condition.

The Caledonian Coal Company is also working two seams of coal, which lie above the Otero vein, which is being worked by a small force of men. I inspected the workings of the two veins and found them in good condition.

November 10, 1899.—On this day I again inspected the mine known as the Otero mine. I measured 13,000 cubic feet of air entering the mine per minute and measured 14,480 cubic feet of air returning per minute. I found the workings of the mine well ventilated. I found some loose rock in No. 2 left entry, and ordered the superintendent to have the loose rock removed and to have the place timbered with good and substantial timbers.

January 10, 1900.—On this day I again inspected the mine known as the Otero mine. I measured 9,600 cubic feet of air entering the mine per minute and measured 10,150 cubic feet of air returning per minute. I then inspected the working places throughout the mine and found them well ventilated and in good condition.

March 9, 1900.—On this day I again inspected the mine known as the Otero mine. I measured 9,360 cubic feet of air entering the mine per minute and measured 9,840 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

March 10, 1900.—On this day I was engaged in inspecting the mines known as the Otero mines Nos. 1 and 2, said mines being the upper veins of coal which overlie the original Otero mine, and are located on the same tract of land as the Otero mine. I inspected the workings of the two mines and found the workings in good condition. I also inspected the machinery belonging to the Otero mine and found the machinery in first-class condition.

April 12, 1900.—On this date I visited the Otero mine. Upon my arrival at the mine the superintendent informed me that Thomas G. McGrail had been injured in the mine on the 30th day of March, at 11 o'clock a. m., by a fall of top coal, and died from the injuries sustained on March 31, at about 3 o'clock a. m. (See report under the head of "Fatal accident report.")

On this date I visited every miner working in the mine and cautioned them about working under this top coal without using props to keep the top coal from falling on them, but it is almost impossible to get the miners to realize the great danger and chances they are taking, and on account of the top coal being of a tough nature, they neglect to use props to secure the top coal from falling. I have repeatedly cautioned the miners about using props when working under the top coal in order to secure their working places from all danger, but as a general rule they are so anxious to get out coal that they forget the danger and keep on working without securing their working places. I also told the superintendent that it was his duty to see that the miners used props to hold the top coal up while working under it. He informed me that he had time and time again cautioned the miners about working under the top coal without using props, but said that while some would obey his instructions others would not, and that all he could do was to furnish them the props, and if they would not use them he did not think the company responsible for their actions.

May 14, 1900.—On this date I again inspected the mine known as the Otero mine. I measured 5,760 cubic feet of air entering the mine per minute and measured 5,980 cubic feet of air returning per minute. At the bottom of the slope I measured 4,410 cubic feet of air traveling per minute. I then inspected all the underground workings of the mine and found the workings in good condition.

June 15, 1900.—On this date I again inspected the mine known as the Otero mine. I measured 19,040 cubic feet of air entering the mine per minute and measured 19,425 cubic feet of air returning per minute. I then measured 5,280 cubic feet of air traveling at the bottom of the slope, and measured 2,160 cubic feet of air traveling per minute in No. 2 cross entry. I found three rooms on No. 2 cross entry which required crosscuts driven between them, and ordered the superintendent to have crosscuts driven at the face of the rooms, so as to allow the air to circulate up to the face of the workings. The superinfendent informed me that he would have the work of driving the crosscuts commenced immediately.

THATCHER MINE.

[Alex. Bowie, general manager; John Stewart, superintendent; James W. Bowie, mining engineer.]

This mine is located about 3 miles in an easterly direction from the town of Gallup, Bernalillo County, N. Mex., and is owned and operated by the Caledonian Coal Company, of Gallup, N. Mex. This mine is situated on a spur about 2 miles in length, being an extension of the spur on which the Otero mine is situated, and is connected with the Santa Fe Pacific Railroad near the station of Gallup. Since my previous visit to this mine, on June 18, 1900, the company has reported the erection of a 12-foot Crawford & McCrimmon fan, manufactured by the Crawford & McCrimmon Company, of Brazil, Ind. The mine is operated by a slope 1,100 feet in length, and has a capacity of 600 tons per day.

Kind of coal, lignite; thickness of vein, 4 feet 6 inches; total output for fiscal year, 32,000 tons; estimated value of output, $47,000; value of improvements this year, $12,000; number of tons of coal used at mine, 350; average number of men employed outside, 12; average number of men employed inside, 75; average number of boys, inside, 2; number of days mine worked, 280; where coal is marketed, Santa Fe Pacific Railway, Santa Fe, Prescott and Phoenix Railroad, and California.

RECORD OF INSPECTION.

September 22, 1899.—On this date I inspected the mine known as the Thatcher mine. I measured 3,300 cubic feet of air entering the mine per minute and measured 3,600 cubic feet of air returning per minute. I found the miners working too far in advance of the air at the face of the slope, and ordered a crosscut driven from the face of the back slope to the main slope.

November 6, 1899.—On this date I was informed that a miner had been killed in the Thatcher mine. (See fatal accident report, under head of "Fatal accidents.")

November 8, 1899.—On this date I again inspected the Thatcher mine. I inspected all the underground workings and took air measurements. I measured 5,600 cubic feet of air entering the mine per minute and measured 5,760 cubic feet of air returning per minute. I found a very small volume of air traveling at the face of the workings, and ordered all the stoppings along the slope made air-tight, so as to force the air up to the face of the workings. I also ordered a larger furnace erected in the upcast.

Januarg 6, 1900.—On this date I again inspected the mine known as the Thatcher mine. I measured 8,800 cubic feet of air entering the mine per minute and measured 8,810 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings well ventilated and in good condition.

March 6, 1900.—On this date I again inspected the mine known as the Thatcher mine. I measured 7,220 cubic feet of air entering the mine per minute and measured 7,440 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings well ventilated and in good condition.

April 16, 1900.—On this day I again inspected the mine known as the Thatcher mine. I measured 14,400 cubic feet of air entering the mine per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated. I found some loose rock in the roof of the main slope, and ordered the pit boss to have the loose rock taken down and the place timbered. The pit boss informed me that he would comply with my request. Otherwise I found the mine in good condition.

May 16, 1900.—On this day I again inspected the mine known as the Thatcher mine. I measured 8,825 cubic feet of air entering the mine per minute and measured 9,030 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found a very bad roof in nearly all of the rooms. I ordered the pit boss to keep the miners supplied with plenty of timbers, and ordered the miners to keep their working places well timbered. On this date I was informed by the pit boss that a new fan had been ordered for this mine and that it would be erected on the mine just as soon as it arrived.

June 18, 1900.—On this date I again inspected the mine known as the Thatcher mine. I measured 12,000 cubic feet of air entering the mine per minute and measured 12,240 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings well ventilated and in good condition. A new fan is being erected on this mine which has a capacity of 30,000 cubic feet of air per minute. On this day the mine was not being operated.

GALLUP MINE.

[W. M. Weaver, general manager; Hugh McGinn, superintendent; John T. Kebler, general superintendent.]

This mine is located about 3 miles northwest of the town of Gallup, Bernalillo County, N. Mex., and was operated by the Crescent Coal Company up to the 1st day of April, 1900, when it went into the hands of the American Fuel Company; incorporators, Julian A. Kebler, Alfred C. Cass, and John L. Jerome, of Denver city, Colo. The company's principal place of business is at Denver, Colo., and its headquarters for New Mexico are at Gallup, N. Mex.

Since this mine passed into the hands of the above-named company it has been operated, as I am informed, by the Colorado Fuel and Iron Company, of Denver, Colo.

This mine is situated on a spur about 3 miles in length connecting with the Santa Fe Pacific Railroad near Gallup station, N. Mex. Kind of coal, lignite; thickness of vein, 6 feet; total output for fiscal year, 180,000 tons; estimated value of output, $250,000; depth of slope, 3,300 feet; value of improvements this year, $10,000; average number of men employed outside, 20; average number of men employed inside, 200; average number of boys employed inside, 5; where coal is marketed, New Mexico, Arizona, Texas, California, and Old Mexico; number of days mine worked, 300; number of tons of coal used at mine, 5,000.

RECORD OF INSPECTION.

September 25, 1899.—On this date I visited and inspected the mine known as the Gallup mine. The fan was running 90 revolutions per minute, and I measured 33,000 cubic feet of air entering the mine per minute and measured 33,210 cubic feet of air returning per minute. I also took air measurements throughout the workings, and found the workings well ventilated and in good condition.

November 13, 1899.—On this date I again inspected the mine known as the Gallup mine. The fan was running 65 revolutions per minute, and I measured 31,350 cubic feet of air entering the mine per minute and measured 32,770 cubic feet of air returning per minute. I then inspected No. 10 right entry and No. 15 left entry and the workings thereon. I found the workings well ventilated and in good condition.

November 14, 1899.—On this day I again inspected the Gallup mine. I inspected No. 11 straight entry, No. 1 right entry, and Nos. 1 and 2 right cross entries, and the workings thereon. I found the workings on the above-mentioned entries well ventilated and in first-class condition.

January 11, 1900.—On this day I again inspected the mine known as the Gallup mine. The fan was running 90 revolutions per minute, and I measured 32,000 cubic feet of air entering the mine per minute. I then inspected No. 11 straight entry and the workings thereon. I found the ventilation good throughout the workings. I found considerable dust in No. 11 straight entry, and ordered the pit boss to have it hauled out of the mine.

January 12, 1900.—On this date I again visited the Gallup mine, and inspected No. 15 left entry and the workings thereon; also No. 2 left entry, which is driven off from No. 11 straight entry. I measured 2,200 cubic feet of air traveling at the face of the workings on No. 15 left entry, but the current of air was not sufficient to clear the working places of smoke when the miners were shooting, and I ordered the pit boss to have more air conducted up to the face of the working places. The pit boss informed me that he would attend to the matter at once.

March 13, 1900.—On this day I was engaged in inspecting the mine known as the Gallup mine. I inspected No. 11 straight entry, No. 2 left entry, and Nos. 1 and 2 right cross entries, and the workings thereon. At the entrance to the above-described workings I measured 14,025 cubic feet of air traveling per minute. I then inspected all of the rooms and the working places on the entries, and found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Face of No. 11 straight entry	3,900
Face of No. 2 left cross butt entry	3,825
Face of No. 2 right cross butt entry	3,150
Outlet from No. 2 right butt entries	3,750
Outlet from No. 2 left butt entries	4,375
Return at new outlet	9,450
Outlet at No. 1 cross butt entries	3,400

I found the workings to be well ventilated, and found the workings well timbered and in good condition.

March 14, 1900.—On this date I again visited the Gallup mine and inspected the main hauling slope and No. 15 left entry and the workings thereon. The fan was running 90 revolutions per minute, and I measured 34,650 cubic feet of air entering the mine per minute. I also measured 4,950 cubic feet of air traveling per minute at the face of No. 15 left entry. I then inspected the rooms and working places on said mentioned entry and found the workings in good condition.

April 13, 1900.—On this date I again inspected the mine known as the Gallup mine and found that it was being operated by the Colorado Fuel and Iron Company. The fan was running 85 revolutions per minute, and I measured 33,825 cubic feet of air entering the mine per minute. I then inspected the main hauling slope and No. 15 left entry. I also inspected the machinery belonging to the mine and found the machinery and workings of the mine in good condition.

May 6, 1900.—On this date I commenced my inspection of the Gallup mine. The fan was running 83 revolutions per minute, and I measured 42,570 cubic feet of air entering the mine per minute. I then inspected the new workings at the bottom of the slope and No. 15 left entry and the workings thereon. At the face of No. 15 left entry I measured 6,000 cubic feet of air traveling per minute. I then inspected the places which were being worked on the entry and found them in fair condition. The only work being done on this entry was the drawing of pillars, and I ordered the miners to use plenty of props and keep their places secure from all falls of rock.

May 9, 1900.—On this day I continued my inspection of the Gallup mine. I inspected No. 2 left entry, No. 11 straight entry, No. 4 cross entry, and the mine known as No. 3½. I found two miners drawing pillars at the face of No. 2 left entry. I considered that place dangerous, and ordered the miners to stop work. I also found considerable dust on the main entries and ordered the pit boss to keep the entries well wet down and allow no dust to accumulate in the mine. I found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Intake to No. 2 left entry	13,750
Face of No. 11 straight entry	5,100
Intake to No. 3½ vein	2,520
Last crosscut at face of workings on No. 3½ vein	2,160
Intake to No. 4 cross entry	6,325
Return from No. 4 cross entry	13,500

I found the workings of the mine well ventilated, and, with the exception of the face of No. 2 left entry, I found the workings well timbered and in good condition.

May 10, 1900.—On this day I was engaged in inspecting the machinery belonging to the Gallup mine. I inspected the fan, boilers, haulage ropes, car chains and couplings, and found the same in good condition.

June 13, 1900.—At 9.40 p. m. of this day I was notified that two men, who were working on the night shift in the Gallup mine, had been killed. I immediately hired a conveyance and drove to the mine and went down into the mine where the accident had occurred. (See full report under the head of "Fatal Accidents.")

June 16, 1900.—From the time that the explosion occurred in the Gallup mine until June 16 the mine did not work, and on this day I was informed that the Gallup mine would resume work again. I visited the mine, and upon my arrival at the mine I was informed that only a few company men were going to work and their business was to examine the mine thoroughly and repair any damage which was caused by the powder explosion of June 13. I went down into the mine with the men and directed some of the work, such as having the stoppings along the slope closed properly and made air-tight; also the timbering in the slope. I also inspected the entry known as No. 11 entry and the workings thereon. I found the entry well wet down and found the workings on the entry in good condition.

This mine shows an increase in production of 28,475 tons, an increase in estimated value of $38,000, increase in improvements of $5,883, and the mine was operated 59 days more than last year, but a decrease of 50 men in the average number of men employed as compared with the fiscal year ending June 30, 1899.

CATALPA MINE.

[W. M. Weaver, general manager; Hugh McGinn, superintendent; John T. Kebler, general superintendent.]

This mine is located about 3 miles in a southeasterly direction from the town of Gallup, Bernalillo County, N. Mex., and was operated by the Crescent Coal Company up to the 1st day of April, 1900, when it went into the hands of the American Fuel Company, incorporators, Julian A. Kebler, Alfred C. Cass, and John L. Jerome, of Denver City, Colo. The company's principal place of business is at Denver, Colo., and its headquarters for New Mexico are at Gallup, N. Mex.

Since this mine passed into the hands of the above-named company it has been operated, as I am informed, by the Colorado Fuel and Iron Company, of Denver, Colo.

This mine is situated on a railway spur 3 miles in length connecting with the Santa Fe Pacific main line near Gallup Station, N. Mex. Kind of coal, lignite; thickness of vein, 6 feet; total output for fiscal year, 80,000 tons; estimated value of output, $110,000; depth of slope, 2,000 feet; value of improvements this year, $6,000; average number of men employed outside, 10; average number of men employed inside, 100; average number of boys employed inside, 2; where coal is marketed, New Mexico, Arizona, and California; number of days mine worked, 285; number of tons of coal used at mine, 1,510.

RECORD OF INSPECTION.

September 29, 1899.—On this date I inspected the mine known as the Catalpa mine. I measured 7,560 cubic feet of air entering the mine per minute and measured 7,600 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

November 6, 1899.—On this date I again inspected the mine known as the Catalpa mine. I measured 7,612½ cubic feet of air entering the mine per minute and measured 7,865 cubic feet of air returning per minute. I discovered some gas (fire damp) at the face of No. 2, left main entry, and ordered the pit boss to have canvas brattice put up from the last crosscut on the entry to the face of the main entry, so as to force the air up to the face of the entry and sweep the gas away.

January 9, 1900.—On this date I again inspected the mine known as the Catalpa mine. I measured 8,500 cubic feet of air entering the mine per minute and measured 8,800 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

March 7, 1900.—On this day I again inspected the mine known as the Catalpa mine. Since my previous visit to this mine a 12-foot Crawford & McCrimmon fan has been erected on the mine and I found the ventilation very much improved. I measured 17,325 cubic feet of air entering the minute and found the air measurements throughout the workings to be as follows:

Air traveling per minute.

	Cubic feet.
Crosscut and face of second right entries	7,200
Face of No. 3 right entries	7,650
Crosscut at face of No. 4 right entries	6,480
Crosscut at face of No. 3 left entries	5,940
Return at fan	18,450

I found the workings of the mine well ventilated and in good condition.

April 11, 1900.—On this date I was informed that Anton Vicich, an Austrian, had been killed in the Catalpa mine, said fatal accident having occurred on the 7th day of April, 1900. I visited the mine and inspected the place where the accident occurred. (See full report under the head of "Fatal accidents.")

April 18, 1900.—On this date I was informed that a small feeder of gas (fire damp) had been encountered in the Catalpa mine at the bottom of the slope. I visited the mine and found that some gas had been generating at the bottom of the slope, and I ordered the pit boss to erect canvas brattice and keep the air circulating up to the face of the coal; also to have all places in the mine thoroughly examined for gas every morning before the miners commenced work, and if gas was found in any of the places of the mine to have it removed before any person was allowed to commence work in said place. The pit boss informed me that he would comply with my request and would use every precaution for the safety of the persons employed in the mine.

May 5, 1900.—On this day I was again engaged in inspecting the mine known as the Catalpa mine. The fan was running 95 revolutions per minute, and I measured 20,790 cubic feet of air entering the mine per minute. I then inspected Nos. 3 and 4, left entries, and Nos. 3 and 4, right entries, and the workings thereon. I found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Last crosscut near face of No. 3 left entry	2,080
No. 2 crosscut near face of No. 3 left entry	5,142½
Last crosscut near face of No. 4 left entry	3,600
No. 2 crosscut near face of No. 4 left entry	2,520
Last crosscut at bottom of slope	5,201
Last crosscut at face of No. 4 right entry	11,700
Last crosscut near face of No. 3 right entry	2,047½
No. 2 crosscut near face of No. 3 right entry	6,352½

I found the workings of the mine well ventilated and in good condition.

May 7, 1900.—On this date I again visited the Catalpa mine. I inspected No. 2, right entry, and the workings thereon. I measured 5,040 cubic feet of air traveling through the last crosscut near the face of the entry. I found the workings on this entry in good condition. I then inspected the old abandoned working places for the purpose of ascertaining if there was any gas in the workings, but found none. I then measured the air in the return-air course and found 21,780 cubic feet of air returning per minute. After finishing my inspection of the mine I met Mr. John T. Kebler, who is general superintendent of the Colorado Fuel and Iron Company, and told him that some gas (CH_4) had been discovered in the mine and that I wanted a fire boss employed for the purpose of examining the mine thoroughly for gas every morning before the miners commenced work. Mr. Kebler informed me that he would attend to the matter and have a fire boss to commence work on the following morning.

May 8, 1900.—On this day I called at the office of the Colorado Fuel and Iron Company and inquired of Mr. McGinn, who is superintendent, if a fire boss had been put to work at the Catalpa mine. He informed me that a fire boss commenced working early in the morning.

June 12, 1900.—On this date I again visited the Catalpa mine, and upon my arrival at the mine I found that the mine was not being operated. I inspected the machinery belonging to the mine, consisting of the fan, boilers, hoisting engine, haulage ropes, car couplings, etc. I found the machinery in good condition.

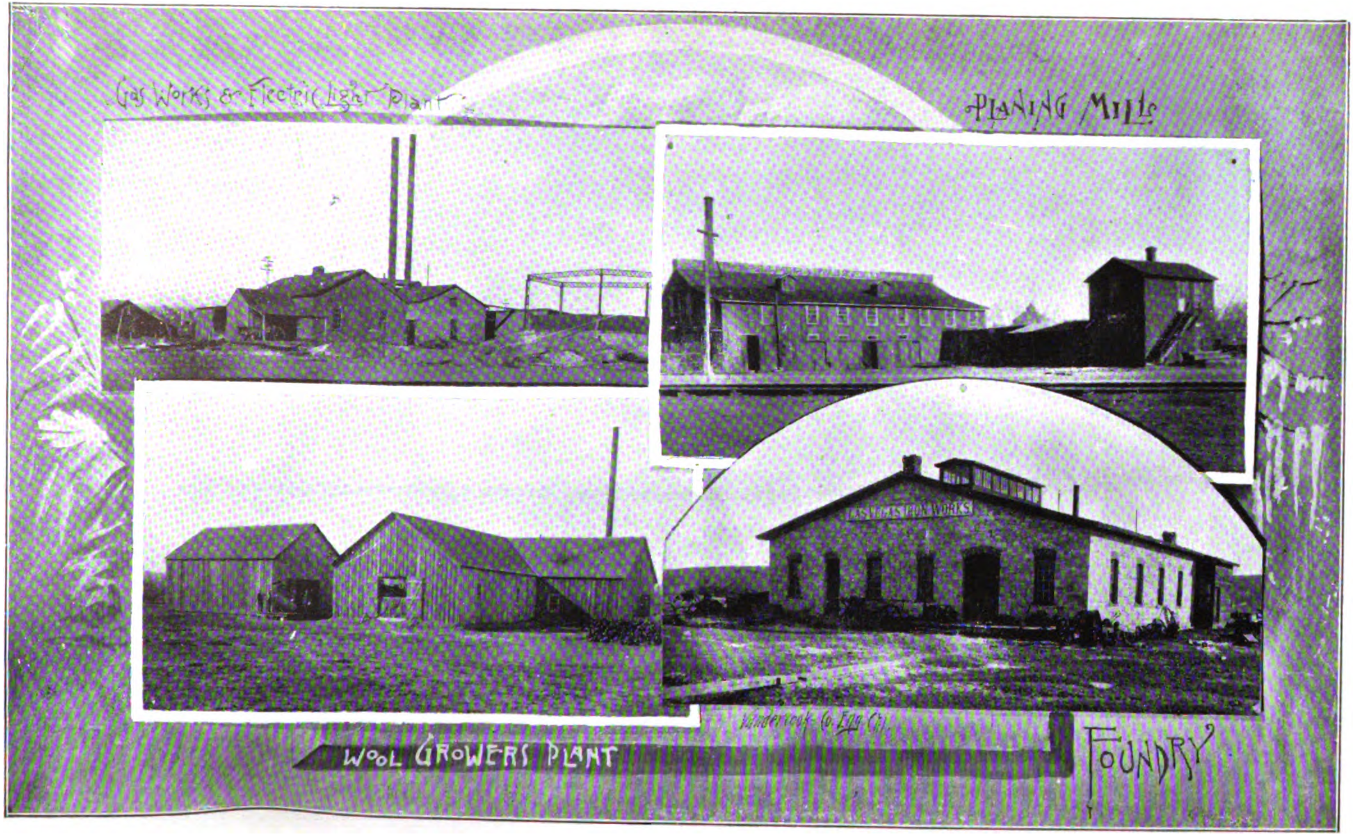
June 13, 1900.—On this day I again visited the Catalpa mine and inspected the underground workings. The fan was running 95 revolutions per minute, and I measured 17,710 cubic feet of air entering the mine per minute and measured 18,150 cubic feet of air returning per minute. I found the air distributed as follows:

Air traveling per minute.

	Cubic feet.
No. 1 crosscut at bottom of slope	4,000
No. 2 crosscut at bottom of slope	4,860
Last crosscut at face of No. 4, left entry	5,070
Last crosscut at face of No. 4, right entry	3,310

I found the workings of the mine well ventilated and in good condition.

This mine shows an increase of production of 21,939 tons, an increase of $28,720 in estimated value of output, and the mine worked forty-nine days more than during the fiscal year ending June 30, 1899.



INDUSTRIAL PLANTS, LAS VEGAS.

CROWN POINT MINE.

[W. M. Weaver, general manager; Hugh McGinn, superintendent; John T. Kebler, general superintendent.]

This mine is located about 3 miles in a northerly direction from the town of Gallup, Bernalillo County, N. Mex., and was operated by the Crescent Coal Company up to the 1st day of April, 1900, when it passed into the hands of the American Fuel Company. Incorporators, Julian A. Kebler, Alfred C. Cass, and John L. Jerome, of Denver City, Colo. The company's place of business, principally, is at Denver, Colo., and its headquarters for this Territory are at Gallup, N. Mex.

After passing into the hands of the American Fuel Company the mine was closed down on April 3, and since that time no work has been done in the mine. Kind of coal, lignite; thickness of vein, 4 feet; total output for fiscal year, 40,000 tons; estimated value of output, $55,000; depth of shaft, 225 feet; value of improvements this year, $1,000; average number of men employed outside, 7; average number of men employed inside, 35; average number of boys employed inside, 2; where coal is marketed, Arizona and California; number of days mine worked, 280; number of tons of coal used at mine, 1,500.

RECORD OF INSPECTION.

September 27, 1899.—On this date I was engaged in inspecting the mine known as the Crown Point mine. The fan was running 85 revolutions per minute, and I measured 12,840 cubic feet of air entering the mine per minute and measured 15,325 cubic feet of air returning per minute. I found some water in the main air course and ordered the pit boss to have it taken out; otherwise I found the mine well ventilated and in good condition.

November 11, 1899.—On this day I again inspected the mine known as the Crown Point mine. The fan was running 80 revolutions per minute, and I measured 9,950 cubic feet of air entering the mine per minute and measured 11,400 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

January 13, 1900.—On this day I again inspected the mine known as the Crown Point mine. The fan was running 70 revolutions per minute, and I measured 11,000 cubic feet of air entering the mine per minute and measured 11,600 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated. I found two places in the roof of the main hauling entry in bad condition and ordered the pit boss to have the place timbered. He informed me that he would have the night shift timber the places.

March 12, 1900.—On this day I again inspected the mine known as the Crown Point mine. The fan was running 100 revolutions per minute, and I measured 19,200 cubic feet of air entering the mine per minute and measured 19,800 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

As this mine was closed down on the third day of April, 1900, I did not again visit the mine.

ROCKY CLIFF MINE.

[Stephen Canavan, owner and general manager.]

This mine is located about 2 miles in an easterly direction from the town of Gallup, Bernalillo County, N. Mex. Owned and operated by Stephen Canavan. Kind of coal, lignite; thickness of vein, 4 feet 6 inches; total output for fiscal year, 28,100 tons; estimated value of output, $39,340; length of slope, 1,000 feet; value of improvements this year, $5,000; average number of men employed outside, 4; average number of men employed inside 46; where coal is marketed, New Mexico, Arizona, and California; number of days mine worked, 175.

RECORD OF INSPECTION.

November 15, 1899.—On this date I visited and inspected the mine known as the Rocky Cliff mine. I measured 6,300 cubic feet of air entering the mine per minute and measured 6,475 cubic feet of air returning per minute. I found some of the miners working under what is known as the top coal without using props to secure the top coal from falling on them, and ordered the miners to use plenty of props and secure their working places from all danger.

January 5, 1900.—On this date I again inspected the mine known as the Rocky Cliff mine. I measured 2,380 cubic feet of air entering the mine per minute and measured 2,500 cubic feet of air returning per minute. I found a very small amount of air traveling through the rooms on Nos. 1, right and left entries, and ordered connection made between the rooms on the above-mentioned entries and Nos. 2, right and left entries. Mr. Canavan informed me that the work would be pushed as fast as possible until the connections were made.

March 5, 1900.—On this date I again inspected the mine known as the Rocky Cliff mine. I measured 5,550 cubic feet of air entering the mine per minute and measured 5,580 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the volume of air traveling through the workings on the right of the slope was not sufficient for the miners who were working on the right side, and I ordered the pit boss to have a heavy canvas curtain placed across the slope so as to force a larger volume of air around through the workings on the right of the slope. Otherwise I found the mine in good condition.

April 14, 1900.—On this day I again inspected the mine known as the Rocky Cliff mine. I measured 10,800 cubic feet of air entering the mine per minute. I then inspected the underground workings of the mine and found the workings well ventilated and in fair condition.

May 11, 1900.—On this day I again inspected the mine known as the Rocky Cliff mine. I measured 11,060 cubic feet of air entering the mine per minute, and measured 12,040 cubic feet of air returning per minute. I then inspected all of the working places in the mine. I again found some of the miners working under what is known as the top coal without timbering the same, and ordered them to timber their places before mining any more coal. At the bottom of the slope I found that the ventilation was deficient, and ordered the pit boss to force more air down to the bottom of the slope. He informed me that he would have the matter attended to the following day.

June 20, 1900.—On this day I again inspected the mine known as the Rocky Cliff mine. I measured 5,540 cubic feet of air entering the mine per minute and measured 5,950 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

This mine is located on a railroad spur connecting with the Santa Fe Pacific Railroad near Gallup station. The mine is ventilated by a furnace, and has a capacity of 200 tons per day. All haulage is done by mules.

This mine shows an increase in production of 23,100 tons, an increase in estimated value of $31,840, an increase of 40 men employed, and a decrease in number of days mine worked of 25 days, over the fiscal year ending June 30, 1899.

UNION MINE.

[President, J. C. Spears; vice-president, T. A. Fabro; superintendent Wm. McVicker; and D. Clark, secretary.]

This mine is located about 1½ miles south of the town of Gallup, Bernalillo County, N. Mex., and was formerly known as the Beacon Hill mine, and is so reported in my monthly reports of inspection. This mine was not operated during the fiscal year ending June 30, 1899. Since the 15th day of November, 1899, this mine has been operated by the Union Coal Company, which was incorporated in the month of May, 1900, with the above-named officers. Kind of coal, lignite; thickness of vein, 6 feet; total output for fiscal year, 3,000 tons; estimated value of output, $6,000; length of slope, 700 feet; value of improvements this year, $2,000; average number of men employed outside, 4; average number of men employed inside, 7; average number of boys employed inside, 1; where coal is marketed, California, Arizona, and New Mexico; number of days mine worked, 160; number of tons of coal used at mine, 50.

RECORD OF INSPECTION.

January 15, 1900.—On this date I inspected the Union mine, formerly known as the Beacon Hill mine, and on this date I inspected the underground workings of the mine and found the workings in good condition. At the time of my visit to the mine there were only five miners employed therein, and connection had not been made between the workings of the mine and the air shaft, and for that reason I did not take any air measurements.

March 6, 1900.—On this day I again visited and inspected the mine known as the Union mine, formerly the Beacon Hill mine. I measured 1,440 cubic feet of air entering the mine per minute, and measured 1,548 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

May 15, 1900.—On this day I again inspected the mine known as the Union mine, formerly the Beacon Hill mine. On this day the mine was not being operated and I took no air measurements. I found that 10 kegs of powder were stored in the mine and ordered Mr. McVicker to have it removed from the mine. He informed me that he would remove the powder before any more work was done in the mine.

A small hoisting plant (steam) is erected at the mine for the purpose of hoisting the coal out of the mine. The coal is hauled in wagons to the Santa Fe Pacific Railroad at Gallup station, and there loaded on the cars and shipped to the various points.

STEWART MINE.

[William Stewart, manager.]

This mine, which was originally known as the Black Diamond mine, is located one-half mile north of the town of Gallup, Bernalillo County, N. Mex., and is owned by the Santa Fe Pacific Railway Company and is operated under lease by William Stewart. This mine is ventilated by an air shaft and has a capacity of 100 tons per day. Kind of coal, lignite; thickness of vein, 6 feet; total output for fiscal year, 6,000 tons; estimated value of output, $10,000; depth of slope, 400 feet; value of improvements this year, $500; average number of men employed outside, 8; average number of men employed inside, 10; where coal is marketed, California, New Mexico, and Arizona; number of days mine worked, 200.

RECORD OF INSPECTION.

September 12, 1899.—On this date I inspected the mine known as the Stewart mine, which was being operated under lease by William Stewart. I measured 1,200 cubic feet of air entering the mine per minute, and measured 1,350 cubic feet of air returning per minute. I found the roof of No. 2 right room in a dangerous condition and ordered the room timbered at once. The miner who was working in the room commenced the work of timbering, and informed me that he would timber the room in good shape and secure it from all danger before any more coal was mined.

November 4, 1899.—On this day I again inspected the mine known as the Stewart mine. I found the air course in very bad condition, and ordered the air course cleared of all falls of rock and put into good condition. The work of clearing the air course was commenced at once.

January 15, 1900.—On this day I again inspected the mine known as the Stewart mine. I measured 3,500 cubic feet of air entering the mine per minute, and measured 3,600 cubic feet of air returning per minute. I then inspected all the working places of the mine and found the mine in good condition.

March 6, 1900.—On this date I again inspected the mine known as the Stewart mine. I measured 3,450 cubic feet of air entering the mine per minute, and measured 3,600 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine, and on the right side of No. 1 entry I found three rooms driven up too far without crosscuts, and ordered Mr. Stewart to have crosscuts driven at the face of the rooms so as to allow the air to circulate up to the face of the workings, which would give good, fresh air to the miners. Mr. Stewart informed me that he would either have the crosscuts driven or stop work in the rooms.

April 18, 1900.—On this day I again inspected the mine known as the Stewart mine. I measured 3,780 cubic feet of air entering the mine per minute, and measured 3,960 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings in good condition.

May 15, 1900.—On this day I again inspected the mine known as the Stewart mine. I found that the air was not being forced up to the face of the workings, and I ordered Mr. Stewart to have crosscuts driven at the face of all rooms, and I also ordered him to erect a furnace in the upcast. Mr. Stewart informed me that he would comply with my request as soon as possible. I found the roof of No. 1 straight entry, and ordered work stopped in said entry until it was timbered.

June 21, 1900.—On this day I again inspected the mine known as the Stewart mine. I measured 2,100 cubic feet of air entering the mine per minute. I then inspected all the underground workings of the mine and found the workings in fair condition.

LINCOLN COUNTY.

OLD ABE COAL MINE.

[John Y. Hewitt, president; William Watson, vice-president; Levin W. Stewart, secretary.]

This mine is situated about 12 miles in a northerly direction from Carrizosa station, on the El Paso and Northeastern Railroad, and a distance of about 3 miles from the town of White Oaks. This mine is owned and operated by the Old Abe Company, with the above named officers. Kind of coal, bituminous; thickness of vein, 3 feet 6 inches; total output for fiscal year, 4,246 tons; estimated value of output, $9,649.58; depth of slope, 400 feet; average number of men employed outside, 1; average number of men employed inside, 9; where coal is marketed, White Oaks, N. Mex., and El Paso, Tex.; number of days mine worked, 300.

RECORD OF INSPECTION.

December 8, 1899.—On this date I inspected the mine known as the Old Abe Coal mine. I found the miners working on No. 2 left entry, where the air was so bad that their lamps would not burn more than five minutes at any one time, and I immediately ordered the men to get out of that entry. I instructed the pit boss to have no more work done on the entry until such time as the air was conducted up to the face of the entry. The pit boss informed me that he would comply with my request.

June 8, 1900.—On this date I again inspected the Old Abe Coal mine. I found the air course of this mine in very bad condition, and ordered the air course cleared of all falls of rock, and also ordered the pit boss to timber the air course and keep it in good condition.

This mine shows an increase in production of 2,777 tons, an increase in estimated value of $5,977.08, and an increase in number of days mine worked of 128, over the fiscal year ending June 30, 1899.

The coal is hoisted out of this mine by means of a whim and horsepower, and the coal is hauled in wagons to the town of White Oaks, N. Mex., and sold to the local trade, and also supplies fuel for a 20-stamp mill which is situated on the Old Abe gold mine. During the past fiscal year the Old Abe Company hauled 688 tons of coal to Carrizosa station, on the El Paso and Northeastern Railroad, where it was loaded on the cars and shipped to El Paso for sale to the local trade.

This mine has a capacity of 100 tons per day.

NEW MEXICO FUEL COMPANY'S MINES.

[W. P. Thompson, general manager.]

The New Mexico Fuel Company owns and operates the coal fields which are located at Capitan, in Lincoln County, N. Mex., about 165 miles from El Paso, Tex. Capitan is the terminus of the El Paso and Northeastern Railroad, which was completed in the month of September, 1899, and the first carload of coal was shipped from the company's mines on September 29, 1899.

Since the opening of the company's mines the town of Capitan has built up quite rapidly. It now has 50 dwelling houses, a large hotel and boarding house, a hospital maintained by the company, and an estimated population of 400.

AKERS MINE NO. 1.

[W. P.Thompson, general manager.]

This mine is located at Capitan, N. Mex, owned and operated by the New Mexico Fuel Company, and is equipped with a 10 by 12 hoisting engine, 60 and 40 horsepower boilers, a 10-foot fan, and a good blacksmith shop. Kind of coal, bituminous; thickness of vein, 3 to 6 feet; total output for fiscal year, 41,260 tons; estimated value of output, $82,520; depth of slope, 800 feet; value of improvements this year, $10,000; average number of men employed outside, 10; average number of men employed inside, 75; where coal is marketed, El Paso, Tex.; number of days mine worked, 225; number of tons of coal used at mine, 350.

RECORD OF INSPECTION.

October 12, 1899.—On this date I first inspected the mine known as the Akers mine No. 1, which is owned and operated by the New Mexico Fuel Company. This mine was ventilated by a furnace, and I measured 5,670 cubic feet of air entering the mine per minute and measured 5,850 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

December 5, 1899.—On this date I again inspected the mine known as the Akers mine No. 1. I measured 7,310 cubic feet of air entering the mine per minute and measured 7,560 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated and in good condition.

February 6, 1900.—On this day I again inspected the mine known as the Akers mine No. 1. I measured 9,450 cubic feet of air entering the mine per minute and measured 9,720 cubic feet of air returning per minute. I also measured 2,800 cubic feet of air traveling per minute at the face of No. 2 left entry. I found the workings of the mine in good condition.

April 6, 1900.—On this date I again inspected the mine known as Akers mine No. 1. Since my previous visit to this mine, February 6, a new 10-foot Crawford & McCrimmon fan has been erected on the mine, and I measured 17,820 cubic feet of air entering the mine per minute and measured 19,800 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine and found the workings well ventilated. I found some of the rooms on No. 1 left entry which required timbering and ordered the superintendent to have the rooms timbered at once. The superintendent ordered the timbermen to commence timbering the rooms immediately.

June 5, 1900.—On this date I again inspected the mine known as the Akers mine No. 1. The fan was running 52 revolutions per minute, and I measured 15,660 cubic feet of air entering the mine per minute and I measured 16,200 cubic feet of air returning per minute. I then inspected all of the underground workings and found them in good condition.

AKERS MINE No. 4.

[W. P. Thompson, general manager.]

This mine is located at Capitan, N. Mex. Owned and operated by the New Mexico Fuel Company. This mine is equipped with a 10 by 12 hoisting engine, a 12-foot fan, an 18 by 20 Howard air compressor, and two 60-horsepower boilers. This mine is situated on the same vein of coal as the Akers Mine No. 1 and is about 1 mile distant from it. Kind of coal, bituminous; thickness of vein, 2½ to 6 feet; total output for fiscal year, 29,327 tons; estimated value of output, $58,654; depth of slope, 850 feet; value of improvements this year, $9,500; average number of men employed outside, 7; average number of men employed inside, 50; where coal is marketed, El Paso, Tex.; number of days mine worked, 175; number of tons of coal used at mine, 400.

RECORD OF INSPECTION.

December 6, 1899.—On this date I was engaged in inspecting the mine known as the Akers mine No. 4. At the time of my visit the only work being done on the mine was development work. I found the workings of the mine in good condition.

February 7, 1900.—On this date I again inspected the mine known as Akers mine No. 4. I found a very small amount of air traveling through the workings of the mine and ordered the general manager to have a furnace erected at the top of the upcast. The work of erecting the furnace commenced immediately.

April 7, 1900.—On this date I again inspected the mine known as the Akers mine No. 4. Since my previous visit to this mine, February 7, a new 12-foot Crawford & McCrimmon fan has been erected on the mine. The fan was running 36 revolutions per minute, and I measured 11,760 cubic feet of air entering the mine per minute and measured 12,600 cubic feet of air returning per minute. I found the workings of the mine well ventilated, but found the roof of all rooms which were driven off from No. 1 left entry in bad condition. I ordered the superintendent to keep the rooms well timbered and secure from all danger. The superintendent ordered the timbers brought into the mine and instructed the miners to timber their places before mining any more coal.

June 5, 1900.—On this date I again visited the mine known as Akers mine No. 4. The fan was running 65 revolutions per minute, and I measured 27,000 cubic feet of air entering the mine per minute and measured 27,270 cubic feet of air returning per minute. I found the workings of the mine in good condition.

AYERS MINES NOS. 2, 7, AND 8.

[W. P. Thompson, general manager.]

These mines are situated at Capitan, N. Mex., and are owned and operated by the New Mexico Fuel Company. These mines are located about 3,000 feet from Akers mine No. 1, and apparently upon a second seam of coal, although it is difficult to tell from the present amount of development work whether there is one or two seams of coal. Each mine is equipped with an 8 by 10 hoisting engine, and the mines are each ventilated by an air shaft. There is a tramway leading from Nos. 7 and 8 mines to No. 2 mine tipple, where the coal from Nos. 7 and 8 is loaded into the railroad cars. No. 2 mine is operated by a slope 250 feet in length. This mine has been worked out and abandoned. Kind of coal, bituminous; thickness of vein, 4 feet; total output for fiscal year, 13,227 tons; estimated value of output, $26,454; depth of slopes, No. 7, 325 feet; No. 8, 220 feet; value of improvements this year, $3,500; average number of men employed outside, 3; average number of boys outside, 2; average number of men employed inside, 50; where coal is marketed, El Paso, Tex.; number of days mines worked, 175; number of tons of coal used at mines, 100.

RECORD OF INSPECTION.

October 13, 1899.—On this day I inspected the mine known as the Ayers mine No. 2. At the time of my visit there was no work being done on this mine. I inspected the underground workings of the mine and found them well timbered and in splendid condition. A fault was encountered at the face of the slope and work was suspended. The company was prospecting with a diamond drill in ahead of the fault, and if the vein of coal is encountered with the drill work will be resumed on the mine.

December 6, 1899.—On this date I again inspected the mine known as the Ayers mine No. 2, and found the workings of the mine well timbered and in good condition.

February 8, 1900.—On this day I again inspected the mine known as the Ayers mine No. 2. On this date very little work was being done in the mine, only 10 men being employed therein. I found the workings of the mine in good condition. On this date I also inspected Nos. 7 and 8 mines, being located on the same vein as No. 2 mine. Very little work was being done in the mines. The production from the two mines was about 40 tons per day. I found the workings of the mines in good condition.

June 6, 1900.—On this date, I again inspected the mines known as Ayers mines Nos. 7 and 8. I found the mines to have a very bad and dangerous roof and ordered the superintendent to have an extra timberman employed for the purpose of keeping the mines well timbered. The superintendent employed a timberman immediately. I also ordered the superintendent to have an entry driven and make connection between Nos. 7 and 8 mines so as to give the air a chance to circulate throughout the workings. The superintendent informed me that the work of driving the entry would be pushed to completion as speedily as possible.

The company has had three prospecting slopes driven down on the veins of coal designated as Nos. 3, 5, and 6 mines, but no machinery has been erected on said mentioned mines and no coal has been shipped from these openings.

Since September 29, when the first coal was shipped from the company's mines at Capitan, there has been a total production of 83,814 tons, which has an estimated value at the mines of $167,628. The average number of men employed at the mines is 195, and 2 boys. Had it not been for the scarcity of miners the production would have been much larger.

SANTA FE COUNTY.

COOK & WHITE MINE.

[John T. Kebler, general superintendent; H. J. Elliott, superintendent at mines.]

This mine is located about 3 miles south of the town of Los Cerrillos, Santa Fe County, N. Mex., at the town of Madrid, and was operated by the Cerrillos Railroad Company until October 6, 1899, at which time it passed into the hands of the Colorado Fuel and Iron Company, of Denver, Colo., and is being operated under lease by this company from the Los Cerrillos Railroad Company, which latter company, as I am informed, is the owner of the property. Kind of coal, bituminous; thickness of vein, 3 feet 9 inches; total output for fiscal year, 67,117 tons; estimated value of output, $100,675, depth of slope, 2,266 feet; value of improvements this year,

$4,500; average number of men employed outside, 25; average number of men employed inside, 95; average number of boys employed outside, 1; average number of boys employed inside, 7; where coal is marketed, Arizona, New Mexico, Texas, and Old Mexico; number of days mine worked, 280 days; number of tons of coal used at mine, principally slack, 5,892 tons.

This mine is situated on a branch line of the Atchison, Topeka and Santa Fe Railroad which connects with the main line at Waldo station.

The town of Madrid, numbering about 1,200 people, is situated at the terminus of this branch, and is the post-office address of the company in New Mexico. The company owns all the dwelling and business houses of the town of Madrid, which supports a city hall, excellent school, and two churches. The company houses are substantially built, kept in good repair, and rented to the employees. The company also operates a large store in connection with the mines in which is kept a large assortment of general merchandise, in fact everything that the miners need.

In this coal-mining camp there are numerous seams of coal. There are two principal seams, one being bituminous, which is known as the Cook & White mine, the other anthracite, which is known as the Lucas mine. The bituminous vein lies directly under the anthracite vein, a distance of about 150 feet.

The mine is ventilated by means of two exhaust fans, one fan being located on the south side of the main slope and the other on the north side, the main slope being the intake for both fans. The air current going down the main slope splits or goes both ways at the bottom, returning on either side through the workings and up the parallel slopes, which are parallel to the main slope, with a pillar 50 feet thick between them. Each air current then travels its respective side of the mine through all the workings and out by way of the fans. The mine is thus kept clearly ventilated through all its parts.

The whole outside plant is well equipped with a battery of 8 large boilers, 2 large Ingersoll air compressors, and a large 300-horsepower Corliss engine; also tipple, trestle, scales, and other machinery and appliances.

The coal from this mine is screened into three different grades, to wit, the "lump" and "nut," both used for domestic purposes, and the "slack," used for steam purposes; and some of the coal is sold as unscreened coal, or as "run of mine," used for heavy steaming purposes.

RECORD OF INSPECTION.

August 31, 1899.—On this date I commenced my inspection of the mine known as the Cook & White mine. I inspected the main hauling slope and No. 3 right and left entries and the workings thereon. I found some gas (fire damp) at the face of No. 3 left back entry and ordered a crosscut driven at the face of the entry; otherwise I found the workings which I inspected well ventilated and in good condition. I found the air measurements throughout the workings to be as follows:

Air traveling per minute.

	Cubic feet.
Intake on main slope	35,520
Left return near bottom of slope	9,600
Bottom of slope	7,500
Face of third left main entry	6,720
Face of third left back entry	6,160
Return from third left main entry to second left entry	9,600
Right return near bottom of slope	14,400
Face of third right main entry	4,680
Face of third right back entry	4,320
Back entry in front of last slant	10,800
Intake to No. 2 raised plane, on third right entry	6,120
Air traveling on slope above No. 3 entries	25,850

September 1, 1899.—I continued my inspection of the Cook & White mine and inspected No. 2 right and left entries and the workings thereon. I found No. 2 right entries driven too far without a crosscut and ordered the pit boss to have a crosscut driven from the face of the main entry to the back entry. I also found very little air traveling at the top of No. 3 raised plane and ordered more air forced to the top of the plane. I found the air measurements throughout the workings to be as follows:

Air traveling per minute.

	Cubic feet.
Face of No. 2 right entry	960
Intake to No. 3 raised plane	7,280
Crosscut between Nos. 1 and 2 left rooms on No. 3 raised plane	3,840
Crosscut between Nos. 2 and 3 left rooms on No. 3 raised plane	2,925
Crosscut between Nos. 3 and 4 left rooms on No. 3 raised plane	1,920
Crosscut between Nos. 1 and 2 right rooms on No. 3 raised plane	2,430
Bottom of No. 1 dip plane on second left entry	4,000
Return from second left entry to first left entry	7,800

September 2, 1899.—I inspected No. 1 right and left entries and the workings thereon, and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Intake on main slope	39,360
Intake on No. 3 raised plane on No. 1 right entry	18,000
Return at No. 1 fan	19,250
Return at No. 2 fan	41,000

I then visited No. 3 left entries and found that the crosscut had been driven from the face of No. 3 back entry to No. 3 main entry, per my instructions of August 31.

September 7, 1899.—On this date I again visited the Cook & White mine for the purpose of inspecting the old abandoned working places. I inspected the abandoned workings on the first right entry and also No. 1 raised plane on the second right entry and found them clear of gas. I then inspected No. 4 raised plane on the second right entry and found some gas (fire damp) up at the top of the plane. I ordered all work discontinued at the top of the plane until such time as enough of air was traveling at the top of the plane to sweep away any gas that was generating. I also ordered a crosscut driven from No. 2 main entry to No. 1 left room on the plane, and as soon as the crosscut was finished I ordered the pit boss to have a heavy curtain hung across the entry outside the crosscut, so as to force all the air traveling in the entry up through the crosscut and through the workings to the top of the plane. I also ordered all men working on the plane to use safety lamps.

October 17, 1899.—On this date I again inspected the mine known as the Cook & White mine, which is now being operated by the Colorado Fuel and Iron Company, of Denver, Colo. I measured 39,840 cubic feet of air entering the mine per minute. I then inspected the main hauling slope and No. 3 right and left entries and the workings thereon. I took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Below No. 3 right entries on slope	33,000
Bottom of slope about 15 feet from face of coal	4,840
Left return near bottom of slope	10,240
Last crosscut near face of No. 3 left entries	9,280
Return from No. 3 left main entry to No. 2 entry	12,800
Right return near bottom of slope	21,000
Face of No. 3 right main entry	5,250
Intake to No. 2 raised plane on No. 2 right entry	5,220
Intake to No. 1 raised plane on No. 3 right entry	16,575

I found a small amount of gas at No. 3 left back entry and ordered the superintendent to have the canvas brattice extended up closer to the face of said entry, so as to cause the air to circulate up to the face of the workings and sweep the gas away. The work of extending the canvas was commenced at once; otherwise I found the workings in good condition.

October 18, 1899.—On this date I inspected No. 2 right and left entries of the Cook & White and the workings thereon. I took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
In crosscut at face of No. 2 right entries	6,240
Intake to No. 4 raised plane on No. 2 right entry	3,600
Last crosscut between Nos. 1 and 2 left rooms on No. 4 raised plane	3,840

	Cubic feet.
Last crosscut between Nos. 2 and 3 left rooms on No. 4 raised plane	2,160
Last crosscut between Nos. 3 and 4 left rooms on No. 4 raised plane	2,100
Last crosscut between Nos. 3 and 4 right rooms on No. 4 raised plane	3,200
Face of No. 2 right room on No. 4 raised plane	1,000
Intake to No. 3 raised plane on No. 2 right entry	7,300
Bottom of No. 1 dip plane on No. 2 left entry	3,400
Return at No. 1 fan	23,100
Return at No. 3 fan	28,800
Intake on No. 1 right entry, from opening made to surface	9,200

I found the workings which I inspected well ventilated and in good condition.

October 20, 1899.—On this date I inspected the machinery belonging to the Cook & White and Lucas mines. I found the haulage rope on the Cook & White in bad condition and ordered the superintendent to furnish a new rope for the mine. The superintendent informed me that he would furnish another rope as soon as possible.

November 24, 1899.—On this day I was engaged in inspecting the machinery of the Cook & White and Lucas mines; also the safety lamps used in the Cook & White mine. I found the machinery and lamps in good condition.

November 25, 1899.—On this date I again inspected the mine known as the Cook & White. I measured 46,090 cubic feet of air entering the mine per minute. I then inspected the main slope and Nos. 3 right and left entries and the workings thereon, and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Above where air splits at bottom of slope	40,200
Left return near bottom of slope	15,600
Right return near bottom of slope	16,960
Crosscut at face of No. 3 left entries	4,680
Face of No. 3 right entry	11,160
Return from No. 3 right main entry to No. 2 right entries	20,500
Return air at No. 1 fan on left side of slope	20,520

I found the workings which I inspected in good condition and found the workings clear of gas. Since my previous visit to this mine a first-class air course, which was being driven from the second left entries to the third left entries, has been completed, and I found the ventilation very much improved throughout the workings on the left side of the slope.

November 27, 1899.—On this day I again visited the Cook & White mine and inspected the second right entries and the workings thereon, and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Face of second right entry	3,000
Last crosscut between main and back entry	8,160
Intake to No. 4 raised plane on second right entry	3,380
Crosscut between Nos. 1 and 2 left rooms on No. 4 raised plane	3,000
Crosscut between Nos. 2 and 3 left rooms on No. 4 raised plane	3,000
Crosscut between Nos. 4 and 5 right rooms on No. 4 raised plane	1,500
Crosscut between Nos. 3 and 4 right rooms on No. 4 raised plane	1,250
Crosscut between Nos. 2 and 3 right rooms on No. 4 raised plane	860
Crosscut between Nos. 1 and 2 right rooms on No. 4 raised plane	1,440
Intake to No. 3 raised plane on second right entry	4,950
Crosscut between Nos. 1 and 2 left rooms on No. 3 raised plane	1,900
Crosscut between Nos. 2 and 3 left rooms on No. 3 raised plane	1,440
Crosscut between Nos. 6 and 7 right rooms on No. 3 raised plane	1,440
Crosscut between Nos. 5 and 6 right rooms on No. 3 raised plane	600
Crosscut between Nos. 3 and 4 right rooms on No. 3 raised plane	400
Crosscut between Nos. 2 and 3 right rooms on No. 3 raised plane	600
Crosscut between Nos. 1 and 2 right rooms on No. 3 raised plane	1,920
Return at No. 3 fan	46,560

On my tour of inspection I found no gas in the workings, and found the ventilation good throughout the workings. I found some of the miners who were in need of props to timber their working places, and ordered the pit boss to have props furnished to the miners immediately, and he immediately ordered the props.

December 21, 1899.—On this date I commenced my inspection of the Cook & White mine. I measured 40,800 cubic feet of air entering the mine per minute. I then visited No. 2 right entry, and at the face of said entry I measured 500 cubic feet of air traveling per minute. I then went down to the bottom of No. 2 dip plane on No. 2 right entry and found some gas generating from the coal and ordered the canvas brattice extended up to the face of the workings. I then inspected the main hauling slope and No. 3 left entry and the workings thereon. I found the workings at the bottom of the slope, also on No. 3 left entry, well ventilated and in good condition. I then took an air measurement in the return air course at No. 1 fan, which is the outlet for the workings on the left side of the slope, and I measured 25,565 cubic feet of air traveling per minute.

December 22, 1899.—On this date I again visited the Cook & White mine and inspected the working places on No. 3 raised plane, which is driven off from No. 2 right entry. I took air measurements throughout the workings and found all rooms and working places well ventilated.

I then inspected the return air course to No. 3 fan, which is the outlet on the right of the slope, and measured 33,500 cubic feet of air traveling per minute.

January 16, 1900.—On this day I again inspected the Cook & White mine. I measured 40,800 cubic feet of air entering the mine per minute. I then inspected the main hauling slope and Nos. 3 right and left entries and the workings thereon, and took air measurements. I found the air measurements throughout the workings to be as follows:

Air traveling per minute.

	Cubic feet.
On slope below No. 3 entries	36,000
Bottom of slope	1,650
Right return near bottom of slope	15,000
Left return near bottom of slope	16,400
Return to No. 1 fan from No. 3 left main entry	13,440
Face of No. 3 right main entry	4,000
Return from No. 3 right entry to No. 2 right entry	16,425

I found the workings, which I inspected on this day, in good condition and found the ventilation good throughout the workings.

January 17, 1900.—On this date I continued my inspection of the Cook & White mine, and inspected No. 2 right entry and No. 4 raised plane, which is driven off from No. 2 right entry; also took air measurements throughout the workings and found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Face of second right entries in crosscut	8,100
Intake to No. 4 raised plane	6,480
Last crosscut between Nos. 1 and 2 left rooms on No. 4 raised plane	4,500
Last crosscut between Nos. 2 and 3 left rooms on No. 4 raised plane	1,200
Last crosscut between Nos. 4 and 5 right rooms on No. 4 raised plane	1,440
Last crosscut between Nos. 3 and 4 right rooms on No. 4 raised plane	3,000
Last crosscut between Nos. 1 and 2 right rooms on No. 4 raised plane	3,200
Intake to No. 3 raised plane	2,160
Return from No. 2 right entry to No. 1 right entry	10,200

I found the workings which I inspected well ventilated and in good condition.

January 18, 1900.—On this day I again visited the Cook & White mine and inspected the planes known as No. 2 dip plane and No. 3 raised plane, which are driven off from No. 2 right entry. I took air measurements throughout the workings and found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Intake to No. 2 dip plane	6,500
Last crosscut between Nos. 1 and 2 left rooms on plane	6,000
Last crosscut between Nos. 2 and 3 left rooms on plane	5,500
Last crosscut between Nos. 3 and 4 left rooms on plane	5,000
Last crosscut between Nos. 4 and 5 left rooms on plane	4,500
Bottom of No. 2 dip plane	1,200
Last crosscut between Nos. 5 and 6 right rooms on plane	3,200
Last crosscut between Nos. 4 and 5 right rooms on plane	3,120
Last crosscut between Nos. 3 and 4 right rooms on plane	2,820
Intake to No. 3 raised plane	4,400
Last crosscut between Nos. 1 and 2 left rooms on No. 3 raised plane	1,980

	Cubic feet.
Last crosscut between Nos. 2 and 3 left rooms on No. 3 raised plane	1,620
Last crosscut between Nos. 3 and 4 left rooms on No. 3 raised plane	1,440
Last crosscut between Nos. 4 and 5 left rooms on No. 3 raised plane	1,920
Last crosscut between Nos. 5 and 6 left rooms on No. 3 raised plane	960
Last crosscut between Nos. 7 and 8 left rooms on No. 3 raised plane	480
Last crosscut between Nos. 7 and 8 right rooms on No. 3 raised plane	360
Last crosscut between Nos. 5 and 6 right rooms on No. 3 raised plane	540
Last crosscut between Nos. 4 and 5 right rooms on No. 3 raised plane	1,000
Last crosscut between Nos. 3 and 4 right rooms on No. 3 raised plane	1,800
Last crosscut between Nos. 2 and 3 right rooms on No. 3 raised plane	2,880
Return air at No. 3 fan	26,400
Total return at Nos. 1 and 3 fans	42,825

I found the crosscuts which were driven between Nos. 6 and 7 left rooms and 7 and 8 left rooms in very bad condition, they being partially filled with falls of rock, and I ordered the superintendent, also the pit boss, to have the crosscuts cleared of all falls of rock and to keep all crosscuts in good condition.

January 19, 1900.—On this date I was engaged in inspecting the machinery belonging to the Cook & White and Lucas mines. I found the machinery belonging to the Cook & White mine in good condition, but found the main haulage rope on the Lucas mine in bad condition, and when I made mention of it to the superintendent he informed me that he had already ordered a new rope for the mine and would have it put in place of the old rope just as soon as it arrived.

February 23, 1900.—On this date I was engaged in inspecting the machinery belonging to the Cook & White and Lucas mines. I found that a new haulage rope had been put on the Lucas mine to replace the old one, and I found all the machinery in good condition.

February 24, 1900.—On this date I commenced my inspection of the Cook & White mine. I measured 38,400 cubic feet of air entering the mine per minute. I then inspected the workings at the bottom of the slope and Nos. 3 right and left entries and the workings thereon. I found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Right return near bottom of slope	7,500
Left return near bottom of slope	13,500
On slope below No. 3 entries	23,200
Face of No. 3 right entry	1,560
Return from No. 3 right entry to No. 2 right entry	6,600
Return from No. 3 left entry to No. 1 fan	14,400

I found the workings which I inspected well ventilated and in good condition.

February 26, 1900.—On this day I again visited the Cook & White mine and inspected No. 2 right entry and the workings thereon. I measured 12,960 cubic feet of air traveling per minute in the main entry. I then inspected the workings of Nos. 3 and 4 raised plane, which are driven off from No. 2 main right entry. I found the workings on No. 4 raised plane in good condition. On No. 3 raised plane I found some gas (fire damp) in No. 4 left room, where the pillars were being drawn, and ordered canvas brattice extended from the air course up to the face of the room, so as to force a larger volume of air up to the place where the gas appeared to be generating and clear the gas away. I also ordered the pit boss to allow no naked lights used in the room and to use due precaution and see that the miners working in that place were furnished with locked safety lamps, and to allow no powder used in said mentioned room. Otherwise I found the mine in good condition.

March 17, 1900.—On this date I commenced my inspection of the Cook & White mine. I measured 35,040 cubic feet of air entering the mine per minute. I then went down to the bottom of the slope and inspected Nos. 3 right and left entries, and took air measurements, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Near bottom of slope where air splits	31,200
Right return near bottom of slope	17,600
Left return near bottom of slope	14,400
Air traveling at bottom of slope	1,920
Return from No. 3 left entry to No. 1 fan	16,850
Face of No. 3 right entry	6,000

I found the workings which I inspected well ventilated and in good condition.

March 19, 1900.—On this date I again visited the Cook & White mine and inspected No. 2 right entry; also Nos. 3 and 4 raised planes and No. 2 dip plane and the workings thereon. I also took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Face of No. 2 right main entry	9,900
Intake to No. 4 raised plane	8,100
Last crosscut between Nos. 1 and 2 right rooms on No. 4 raised plane	800
Last crosscut between Nos. 2 and 3 right rooms on No. 4 raised plane	1,200
Last crosscut between Nos. 3 and 4 right rooms on No. 4 raised plane	1,500
Last crosscut between Nos. 4 and 5 right rooms on No. 4 raised plane	1,430
Last crosscut between Nos. 5 and 6 right rooms on No. 4 raised plane	1,800
Last crosscut between Nos. 5 and 6 left rooms on No. 4 raised plane	1,600
Last crosscut between Nos. 4 and 5 left rooms on No. 4 raised plane	1,650
Last crosscut between Nos. 1 and 2 left rooms on No. 4 raised plane	1,400
Intake to No. 3 raised plane	7,930
Last crosscut between Nos. 1 and 2 right rooms on No. 3 raised plane	1,750
Last crosscut between Nos. 3 and 4 right rooms on No. 3 raised plane	1,950
Last crosscut between Nos. 6 and 7 right rooms on No. 3 raised plane	1,980
Last crosscut between Nos. 6 and 7 left rooms on No. 3 raised plane	2,450
Intake at top of No. 3 raised plane	3,600
Intake to No. 2 dip plane	6,960
Return from No. 2 right entry to No. 1 right entry	15,800

I found the ventilation good throughout the workings of the mine, but found some of the miners using props which I considered too small in diameter and ordered the pit boss to furnish the miners with larger-sized props.

March 20, 1900.—On this day I inspected the main air course of the Cook & White mine, which is the return air way from the second right main entry up to No. 1 entry, thence along the first right entry and up to No. 3 fan. I found the air course between No. 2 right main entry and No. 1 right entry in bad condition and ordered the superintendent to have the air course enlarged and to have it well timbered.

The work of enlarging the air course was commenced at once, and the superintendent informed me that he would have the work continued until the air course was in first-class condition.

March 22, 1900.—On this day I was engaged in inspecting the fans belonging to the Cook & White mine. I found the fans in good condition.

April 28, 1900.—On this date I arrived at Madrid, where the Cook & White mine is located. Upon my arrival at Madrid I was informed by the superintendent, H. J. Elliott, that the mine had been closed down since April 13, and that he could not tell when work would be commenced again. I then ordered the superintendent to keep the fans running and to keep the air courses in good condition; also to have the mines thoroughly examined for gas before commencing operations again, and the superintendent informed me that he would comply with my request.

May 17, 1900.—On this date I commenced my inspection of the Cook & White mine. I measured 29,760 cubic feet of air entering the mine per minute. I then inspected No. 2 right entry and took air measurements at the face of the entry, also in the intakes to Nos. 3 and 4 raised planes, and found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Below second right entry on slope	28,120
Face of No. 2 right entry	6,160
Intake to No. 3 raised plane	6,480
Intake to No. 4 raised plane	9,415

I found the ventilation splendid throughout the workings. I also made a careful inspection for gas, but found none throughout the workings which I inspected.

May 18, 1900.—On this date I again visited the Cook & White mine. I inspected all of the workings at and around the bottom of the slope, also all workings on Nos. 3 right and left entries, and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Above where air splits near bottom of slope	25,800
Bottom of slope	1,200
Right return near bottom of slope	8,800

	Cubic feet.
Left return near bottom of slope	12,000
In crosscut at face of No. 3 left entry	2,000
Return from No. 3 left entry to No. 1 fan	14,350
Face of No. 3 right entry	7,800
Return from No. 3 right entry to No. 2 right entry	8,640

I found the workings well ventilated, clear of gas, and in good condition.

May 19, 1900.—On this day I again visited the Cook & White mine and inspected the workings on No. 3 raised plane, which is driven off from No. 2 right entry. I took air measurements throughout the workings which I found to be as follows:

Air traveling per minute.

	Cubic feet.
In crosscut between Nos. 1 and 2 right rooms on No. 3 plane	8,250
In crosscut between Nos. 3 and 4 right rooms on No. 3 plane	7,800
In crosscut between Nos. 4 and 5 right rooms on No. 3 plane	7,200
In crosscut between Nos. 1 and 2 left rooms on No. 3 plane	7,050
In crosscut between Nos. 3 and 4 left rooms on No. 3 plane	6,900
In crosscut between Nos. 4 and 5 left rooms on No. 3 plane	6,750

I found the workings on the plane well ventilated, but I found some of the rooms which required timbering and ordered the pit boss to have the rooms timbered. He informed me that he would have the work commenced at once. I then inspected the main air course leading from No. 2 entry up to No. 3 fan and found the air course in good condition. At No. 3 fan, which is the return from all workings on the right of the slope, I measured 26,400 cubic feet of air returning per minute. The force of men in this mine was to be increased considerably, and I instructed the superintendent, also the pit boss, to have every place where men were being put to work thoroughly examined by a competent fire boss before any persons were allowed to work therein. The superintendent and pit boss assured me that they would comply with my request and would use every precaution to avoid accidents happening in the mine.

June 22, 1900.—On this date I commenced my inspection of the Cook & White mine. I measured 39,266 cubic feet of air entering the mine per minute. I then inspected No. 2 right entry and the workings thereon, consisting of No. 1 dip plane and Nos. 3 and 4 raised planes. I found the workings well ventilated and found no gas in the workings which I inspected.

June 23, 1900.—On this day I continued my inspection of the Cook & White mine, and inspected Nos. 3 right and left entries and the workings thereon; also, the workings at the bottom of the slope. I found the air measurements to be as follows:

Air traveling per minute.

	Cubic feet.
Bottom of slope	2,125
Right return near bottom of slope	5,750
Left return near bottom of slope	9,000
Return from No. 3 left entry to No. 1 fan	14,175
Return from No. 3 right entry to No. 3 fan	13,860

I found the workings well ventilated, clear of gas, and in good condition.

LUCAS MINE.

[John T. Kebler, general superintendent; H. J. Elliott, superintendent at mines.]

This mine is located 3 miles south of the town of Los Cerrillos, Santa Fe County, N. Mex., and was operated by the Cerrillos Railroad Company until October 6, 1899, at which time it passed into the hands of the Colorado Fuel and Iron Company, of Denver, Colo., and is being operated under lease by this company from the Cerrillos Railroad Company, which latter company, as I am informed, is the owner of the property. This mine is located on a branch of the Atchison, Topeka and Santa Fe Railroad, which connects with the main line of the road at Waldo Station. The town of Madrid is situated at the terminus of this branch.

This mine is ventilated by a double 6-foot Murphy fan, which is located on the north side of the main slope. The air current traveling on the south side of the mine crosses the slope, and thus reaches the fan through what is known as the overcast or air-tight wooden box, built over the top of the slope and crossing it at right angles. Kind of coal, anthracite; thickness of vein, 2 feet 8 inches; total output for fiscal year, 41,595 tons; estimated value of output, $114,385; value of improvements this year, $1,200; depth of slope, 2,251 feet; average number of men employed outside, 21; average number of men employed inside, 50; average number of boys employed outside, 23 (slate pickers); average number of boys employed inside, 3; where coal is marketed, Arizona, California, Kansas, Texas, New Mexico, and Colorado; number of days mine worked, 248; number of tons of coal used at mine (slack), 3,850.

RECORD OF INSPECTION.

September 5, 1899.—On this date I was engaged in inspecting the mine known as the Lucas mine. I measured 12,480 cubic feet of air entering the mine per minute and measured 12,800 cubic feet of air returning per minute. I then went down into the mine and took an air measurement on the main slope below the fourth right entry and found only 2,400 cubic feet of air traveling per minute. I then made a thorough examination of the slope and found considerable air escaping through the door on the first right entry, also through the door on the second right entry, and ordered the superintendent to have said mentioned places repaired and made air-tight so that a larger volume of air could be forced down to the bottom of the slope. The superintendent had the work commenced at once. I then visited No. 1 dip plane on the fourth right entry and found 6,300 cubic feet of air entering the plane per minute. At the bottom of the plane I measured 3,000 cubic feet of air traveling per minute.

September 6, 1899.—I again visited the Lucas mine for the purpose of ascertaining if my order of the 5th instant had been complied with. I found the doors on Nos. 1 and 2 right entries had been repaired. I then took an air measurement below the fourth right entry and found 4,500 cubic feet of air traveling per minute, which was an increase of 2,100 cubic feet over the amount which I found traveling on the 5th instant. I then inspected Nos. 1 and 2 right entries and the workings thereon and found the workings in good condition.

October 19, 1899.—On this day I again inspected the mine known as the Lucas mine. I measured 15,260 cubic feet of air entering the mine per minute and measured 16,560 cubic feet of air returning per minute. I found the workings of the mine well ventilated and in good condition.

November 28, 1899.—On this day I again inspected the mine known as the Lucas mine. I measured 14,400 cubic feet of air entering the mine per minute and measured 15,360 cubic feet of air returning per minute. I then inspected the workings on No. 4 right entries and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Between Nos. 4 and 5 left rooms on No. 1 dip plane	2,250
Between Nos. 5 and 6 left rooms on No. 1 dip plane	2,560
Between Nos. 1 and 2 left rooms on No. 1 dip plane	4,800
Between Nos. 2 and 3 left rooms on No. 2 dip plane	1,200
Between Nos. 3 and 4 left rooms on No. 2 dip plane	1,400

I found the workings well ventilated and in good condition.

November 29, 1899.—On this date I again visited the Lucas mine and inspected the second right entries and Nos. 1 and 2 dip planes and the working places thereon. I found the workings which I inspected in good condition.

January 20, 1900.—On this day I again inspected the mine known as the Lucas mine. The fan was running 160 revolutions per minute, and I measured 14,400 cubic feet of air entering the mine per minute and measured 15,120 cubic feet of air returning per minute. I then inspected the workings of the mine and took air measurements, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
On slope below No. 4 right entry	5,280
Last crosscut at face of No. 4 right entries	1,710
Intake to No. 1 dip plane on No. 4 right entry	7,530
Last crosscut between Nos. 1 and 2 left rooms on plane	4,600
Last crosscut between Nos. 2 and 3 left rooms on plane	4,250
Last crosscut between Nos. 3 and 4 left rooms on plane	4,160
Last crosscut between Nos. 4 and 5 left rooms on plane	3,960
Last crosscut between Nos. 5 and 6 left rooms on plane	3,580
Bottom of plane	1,080
Last crosscut between Nos. 4 and 5 right rooms on plane	1,400
Last crosscut between Nos. 5 and 6 right rooms on plane	1,500

	Cubic feet.
Last crosscut between Nos. 4 and 5 left rooms on No. 2 dip plane	1,400
Last crosscut between Nos. 5 and 6 left rooms on No. 2 dip plane	1,500
Return from No. 4 right entry to No. 2 right entry	7,650
Air traveling on No. 2 right entry	8,400

I found that the air was not traveling at the bottom of No. 2 dip plane on the fourth right entry, and I ordered the superintendent, Mr. H. J. Elliott, to have an air course driven from No. 4 right entry out to the surface. He informed me that he would commence the work at once.

January 22, 1900.—On this date the superintendent and myself visited the Lucas mine for the purpose of deciding on a place to drive an opening for an air course from No. 4 right entry out to the surface, and after looking over the different workings in the mine, we decided on extending No. 2 raised plane on the fourth right entry out to the surface, and when the work is completed the ventilation throughout the workings of the mine should be very much improved.

February 27, 1900.—On this date I visited the mine known as the Lucas mine for the purpose of ascertaining if the new air course was being driven out to the surface according to my order of January 20. I found that in driving the air course the air could not be forced up to the face of the workings and work was stopped on the air course that day, but a small fan was being placed in the air course, and as soon as the fan was in position, the work of driving the air course would be resumed.

March 21, 1900.—On this date I was engaged in inspecting the mine known as the Lucas mine. The fan was running 140 revolutions per minute, and I measured 13,260 cubic feet of air entering the mine per minute and measured 13,800 cubic feet of air returning per minute. I then inspected the underground workings of the mine and took air measurements throughout the workings, which I found to be as follows:

Air traveling per minute.

	Cubic feet.
On slope above No. 3 entries	7,020
On slope below No. 4 entries	4,950
Bottom of slope	600
Last crosscut between No. 6 main and back entry	2,250
Last crosscut between Nos. 4 and 5 left rooms on No. 1 dip plane	2,000
Air traveling on No. 1 right entry	12,522

March 22, 1900.—On this day I was engaged in inspecting the machinery belonging to the Lucas mine. I found the engine which runs the fan on the Lucas mine in bad condition and ordered the superintendent to have the master mechanic repair the engine and put it in first-class condition. The superintendent informed me that he would have the work of repairing the engine attended to as soon as possible.

I discovered a small feeder of gas (fire damp) down at the bottom of the slope and ordered the pit boss to have the workings thoroughly examined for gas every morning before any of the miners entered the mine. The pit boss informed me that he had employed a very competent man as fire boss and his business was to look after the ventilation and see that there was no standing gas in the mine. Since my previous visit to this mine a new air course had been driven a distance of 85 feet, and the work of driving the air course was being continued as speedily as two shifts could drive it.

June 25, 1900.—On this date I again inspected the mine known as the Lucas mine. The fan was running 120 revolutions per minute and I measured 10,080 cubic feet of air entering the mine per minute and measured 10,150 cubic feet of air returning per minute. I then inspected Nos. 4, 6, and 7 right entries and the workings thereon. I found the workings ventilated in compliance with the law and found the workings well timbered and in good condition.

The breaker, being a large building 250 feet long, 60 feet wide, and 110 feet high, and containing the machinery for crushing and assorting the coal, is located at the mouth of this mine, its top being almost on a level with the mine. The coal as it is hoisted from the mine in pit cars is dumped into the breaker, where it is crushed and graded into sizes known as "grate," "egg," "stove," "nut," and "pea." After being crushed and graded it is stored in storage bins which hold 75 tons each of the respective grades, and from these bins the coal is loaded on the railroad cars and shipped to the different points above mentioned. Compressed-air power is used in running the pumps in the mine. The mine is equipped with electrical bell signals throughout.

OMARA MINE.

[W. P. Gould, lessee.]

This mine is located about 7 miles south of Ortiz Station, which is a station on the Atchison, Topeka and Santa Fe Railroad, in Santa Fe County, N. Mex. Said mine is owned by Frederick Muller and is operated by W. P. Gould as lessee. Kind of coal, bituminous; thickness of vein, 4 feet 6 inches; total output for fiscal year, 1,500 tons; estimated value of output, $3,000; depth of slope, 400 feet; value of improvements this year, $200; average number of men employed outside, 2; average number of men employed inside, 3; where coal is marketed, sold to local trade; number of days mine worked, 200.

Owing to the few men employed in this mine, I did not visit the mine during the fiscal year ended June 30, 1900.

COLFAX COUNTY.

BLOSSBURG MINES.

[Frank Springer, president; J. Van Houten, vice-president; J. A. Wiggs, superintendent; M. M. Walsh assistant superintendent.]

These mines are located near the town of Gardiner, Colfax County, N. Mex., and about 4½ miles in a westerly direction from the town of Raton, N. Mex., where the general offices of the company are located. The mines are owned and operated by the Raton Coal and Coke Company. The Blossburg mines being operated this year are the mines known as Nos. 4, 6, 8, and 9 mines, all of which are located on the same vein of coal, and the total production for the fiscal year from all the company's mines was 391,618 tons.

Blossburg mines Nos. 4 and 6.—Kind of coal, bituminous; thickness of vein, 6 to 7 feet; estimated value of output, not reported; length of drift, 2,900 feet; value of improvements this year, $20,000; average number of men employed outside, 20; average number of men employed inside, 300; average number of boys employed outside, 3; average number of boys employed inside, 10; where coal is marketed, New Mexico, Arizona, and Mexico; number of days mines worked, 313.

RECORD OF INSPECTION.

September 9, 1899.—On this date I inspected Nos. 1, 2, 3, and 4 left entries on the Blossburg mine No. 4. I measured 5,400 cubic feet of air traveling per minute through the last crosscut on Nos. 1 and 2 left entries and measured 15,180 cubic feet of air traveling through the last crosscut on Nos. 3 and 4 left entries. I found the workings which I inspected in good condition.

September 8, 1899.—On this date I inspected the main diagonal entries and Nos. 6, 7, 8, 9, 10, 11, and 12 right entries; also Nos. 1 and 13 left entries of the Blossburg mine No. 4, and took air measurements throughout the workings. I found the workings well ventilated and in good condition. On this day I also inspected the machinery belonging to the mine and found the machinery in good condition.

September 11, 1899.—On this date I inspected the working of No. 6 mine. I measured 28,350 cubic feet of air entering the mine through No. 6 opening. I then inspected Nos. 1 and 2 left entries and the workings thereon. I measured 6,000 cubic feet of air traveling per minute through the last crosscut near the face of the entries. I then inspected the entries known as the main and back entries and the workings thereon. I measured 5,400 cubic feet of air traveling per minute through the last crosscut near the face of the entries. I found the workings which I inspected in good condition and well ventilated.

November 16, 1899.—On this date I again inspected the mine known as the Blossburg mine No. 6. The fan was running 60 revolutions per minute and I measured 9,600 cubic feet of air entering the mine per minute. I then inspected the workings of the mine and found the workings in fair condition.

November 17, 1899.—On this day I again inspected the mine known as the Blossburg mine No. 4. I measured 19,680 cubic feet of air entering the mine per minute. I then inspected the workings of the mine and found the workings in good condition.

Nos. 4 and 6 mines are all one and the same vein of coal and have one return-air course, and in the return-air course I measured 30,000 cubic feet of air returning per minute. I ordered the pit boss to keep a plenty of props and mining timbers on hand for the use of the miners.

October 23, 1899.—On this date I inspected the Blossburg mines Nos. 4 and 6. The fan was running 60 revolutions per minute, and I measured 16,320 cubic feet of air entering No. 4 mine per minute, and measured 15,705 cubic feet of air entering No. 6 mine per minute. I then took air measurements in No. 6 mine and on Nos. 1, 2, 3, and 4 left entries on No. 4 mine. I found the workings which I inspected well ventilated, but found the roof of No. 3 room on the first left entry in a very dangerous condition, and had work suspended in said room until it was properly timbered. I also found a very dangerous place in the roof of the first left entry, and ordered the pit boss to have the loose rock taken down and to timber the place with good, heavy timbers. The pit boss called the timberman and instructed him to commence the work at once.

October 24, 1899.—On this date I was engaged in inspecting Nos. 1, 7, 8, 9, 10, and 11 right entries on No. 4 mine. On the above-mentioned entries the only work being done was drawing the pillars, and I measured 10,800 cubic feet of air traveling per minute around the face of the pillars. I found the working places well timbered and in good condition.

December 18, 1899.—On this day I commenced my inspection of the Blossburg mines Nos. 4 and 6. I measured 47,310 cubic feet of air entering Nos. 4 and 6 mines, and measured 49,560 cubic feet of air returning per minute. I then inspected Nos. 1 and 2 left entries of No. 6 mine, and Nos. 1, 2, 3, and 4 left entries on No. 4 mine and the workings thereon.

I found the workings of said mentioned entries well ventilated and in good condition.

December 19, 1899.—I continued my inspection of the Blossburg mine No. 4. I inspected all of the old workings in the mine and all places where the pillars were being drawn. I found the workings clear of gas, and found the working places well timbered and in good condition.

January 24, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 6, and I measured 12,240 cubic feet of air entering the mine per minute. I then inspected all of the rooms and places which were being worked and found the ventilation good throughout the workings. I found some of the rooms which I examined in a dangerous condition on account of not being properly timbered, and ordered the miners to timber their rooms before mining any more coal. I also ordered the pit boss to keep the miners well supplied with plenty of timbers and props, and to make it the duty of the miners to timber their working places as work progressed, so as to avoid accidents happening in the mine.

January 25, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 4. I measured 13,440 cubic feet of air entering the mine per minute. I then inspected Nos. 1, 2, 3, and 4 left entries; also Nos. 7, 8, 9, 10, 11, 12, 13, and 14 right entries and the workings thereon. I found the ventilation good throughout the workings and found all the places well timbered and in good condition.

February 19, 1900.—On this day I again inspected the mine known as the Blossburg mine No. 4. I measured 14,840 cubic feet of air entering the mine per minute. I then inspected Nos. 8, 9, 10, 11, 12, 13, and 14 right entries; also the entry known as the Blossburg main and No. 13 left entries. On all the above-mentioned entries the pillars were being drawn, and I ordered the miners to keep their working places well timbered and secure from all dangerous conditions. I found all the workings in fair condition.

February 20, 1900.—On this day I again inspected the mine known as the Blossburg mine No. 6. I measured 17,880 cubic feet of air entering the mine per minute, and in the return-air course of Nos. 4 and 6 mines I measured 33,000 cubic feet of air returning per minute. I then inspected all the workings in the mine and found them well ventilated and in good condition.

March 24, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 6. The fan was running 60 revolutions per minute, and I measured 19,140 cubic feet of air entering the mine per minute. I then inspected all the underground workings, and took air measurements which I found to be as follows:

Air traveling per minute.

	Cubic feet.
Face of No. 1 entry	8,400
Face of No. 2 entry	6,600
Air traveling in Nos. 3 and 4 left entries	6,000

I found the workings of the mine well ventilated and in good condition.

March 25, 1900.—On this date (Sunday) at 12 m. I was notified by J. A. Wiggs, superintendent, that a man had been killed in the mine. (See fatal accident report of this date, under the head of Fatal Accident Reports.)

March 26, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 4. I measured 15,605 cubic feet of air entering the mine per minute. I then inspected all the working places in the mine and found several places where the pillars were being drawn that required timbering, and ordered the miners to keep their working places well timbered, and as all work being done in No. 4 mine is drawing pillars, I ordered the assistant superintendent to put an extra man in charge of No. 4 mine, and to make it his duty to examine every working place in the mine every day, and see that plenty of props and timbers were furnished to the miners; also to see that the miners kept their places well timbered. The assistant superintendent informed me that he would employ a competent man for the position at once.

April 19, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 4. I measured 15,120 cubic feet of air entering the mine per minute. I then inspected all of the underground workings and found several places that required timbering, and ordered the assistant superintendent to have the places timbered. He informed me that he would have the timbermen to commence work at once.

April 20, 1900.—On this date I again inspected the mine known as Blossburg mine No. 6. I measured 10,280 cubic feet of air entering the mine per minute. I then inspected the workings of the mine and found the workings well ventilated, but I found Nos. 6 and 12 rooms on No. 2 entry being worked without being properly timbered. I ordered the miners to stop working in said rooms until such time as they were timbered and made perfectly secure from all danger.

May 22, 1900.—On this day I again inspected the mine known as the Blossburg mine No. 4. I measured 4,800 cubic feet of air entering the mine per minute. I then examined every working place in the mine and found two places which were in a dangerous condition, and ordered the miners to stop work and timber their places before they did any more mining.

May 23, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 6. I measured 14,900 cubic feet of air entering the mine per minute. I then inspected all the underground workings of the mine. I found No. 3 room on No. 18 entry in a dangerous condition and ordered the miners to stop work in said mentioned room. I then inspected the main return-air course for Nos. 4 and 6 mines and found the air course in good condition. After finishing my inspection of the underground workings, I inspected the fan and found that it was running only 43 revolutions per minute, its regular speed being 60 revolutions per minute, and I ordered the superintendent to have the fan speeded up to 60 revolutions per minute. The superintendent informed me that he would have the fan stopped on Sunday, the 27th, when all men would be out of the mines, and would have the master mechanic regulate the speed of the fan so as to keep it running at 60 revolutions per minute.

June 26, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 4. I measured 14,580 cubic feet of air entering the mine per minute. I then inspected all the underground workings of the mine. I found the workings well ventilated and in good condition.

June 27, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 6. I measured 24,300 cubic feet of air entering the mine per minute. I then inspected all the underground workings of the mine; found the workings well ventilated and in good condition.

Blossburg mine No. 8.—This is a new mine opened this year on the same vein of coal as Nos. 4 and 6 mines, and is owned and operated by the same company. Work was commenced on this mine December 1, 1899. Kind of coal, bituminous; thickness of vein, 4½ to 5 feet; length of drift, 1,400 feet; value of improvements this year, $5,000; average number of men employed outside, 10; average number of men employed inside, 100; average number of boys employed outside, 2; average number of boys employed inside, 2; where coal is marketed, Atchison, Topeka and Santa Fe Railroad, Mexican Central Railway, and Southern Pacific Railway; number of days mine worked, 180.

RECORD OF INSPECTION.

January 26, 1900.—On this day I visited and inspected the mine known as Blossburg mine No. 8. At the time of my visit to the mine, the work being done consisted of six entries being driven in on the vein of coal. Nos. 1, 2, 3, and 4 entries were driven a distance of 300 feet each, and Nos. 5 and 6 were driven a distance of 90 feet each.

On account of the few men working in the mine I did not take air measurements, but I found the workings of the mine in good condition.

February 21, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 8. I measured 9,580 cubic feet of air entering the mine per minute and measured 9,600 cubic feet of air returning per minute. I then inspected all the underground workings of the mine and found the workings well ventilated and in good condition.

March 27, 1900.—On this date I again inspected the mine known as the Blossburg mine No. 8. I measured 3,450 cubic feet of air entering the mine by way of No. 1 intake and measured 4,500 cubic feet of air entering by way of No. 2 intake, and measured 8,230 cubic feet of air returning per minute. I inspected all working places in the mine and found them well ventilated, but I found No. 4 and No. 5 right rooms on No. 1 entry very much in need of being timbered, and ordered the miners working in the rooms to timber their rooms up in good shape before mining any more coal. With the exception of the condition of the above-mentioned rooms I found the mine in good condition.

April 21, 1900.—On this date I again inspected the Blossburg mine No. 8. I measured 11,200 cubic feet of air entering the mine per minute and measured 11,520 cubic feet of air returning per minute. I found the miners working too far in advance of the air in Nos. 1, 2, and 3 left rooms on No. 2 entry, and ordered crosscuts driven at the face of said-mentioned rooms. The work of driving the crosscuts was commenced immediately.

May 24, 1900.—On this date I again visited and inspected the mine known as the Blossburg mine No. 8. On this date the mine was not being operated on account of the motor track which leads from the mine to the tipple being in bad condition. I inspected the underground workings of the mine and found them in fair condition.

Blossburg mine No. 9.—This is a new mine opened this year on the same vein of coal as Nos. 4 and 6 mines, and is owned and operated by the same company. Work commenced on this mine on the 1st day of February, 1900. This mine receives its power by electric current from the power house at Gardiner, N. Mex., and most of the mining is done by Morgan-Gardiner electric mining machines. Kind of coal, bituminous; thickness of vein, 4½ feet; length of drift, 600 feet; average number of men employed outside, 8; average number of men employed inside, 40; average number of boys employed outside, 1; average number of boys employed inside, 2; where coal is marketed, Atchison, Topeka and Santa Fe Railroad, Mexican Central Railway, and Southern Pacific Railway; number of days mine worked, 128.

RECORD OF INSPECTION.

June 28, 1900.—On this day I inspected the mine known as the Blossburg mine No. 9. I measured 10,800 cubic feet of air entering the mine per minute. I then inspected the underground workings of the mine and found them in good condition.

All mines owned by the Raton Coal and Coke Company are operated by electricity from one power house, consisting of 6 boilers, aggregating 700 horsepower, furnishing steam to 535-horsepower Card electric generators, being driven by Erie & Skinner automatic engines. Power is transmitted to the mines, 7,500 feet away, through 6 wires, bare copper, 4/0 diameter, furnishing power for electric mining machines. The fans are all driven by electric motors at all mines. Also power is furnished to 4 electric locomotives which are used for hauling coal from the partings in the mines to the tipple. The tipple consists of one structural steel tipple, the platform being 80 feet above the railroad. The coal is dumped into a long chute which is kept filled with coal. At the lower end of the chute the coal is let out into the railroad cars by a steam gate controlled by the car weighman at the bottom. The coal being dumped at the top on an improved Mitchell tipple and the empty cars going to empty tracks by gravity makes it possible to handle the large output of coal economically. This is the only steel tipple in the Territory. The company also has a coal-washing plant, which consists of one 400-ton capacity Robinson-style coal washer, and the buildings are of steel throughout. The washer and tipple cost the sum of $20,000, and were erected this year. The company also has 76 coke ovens of the bee-hive type, each of them being 13 feet in diameter, the charging capacity being 6½ tons to each of them every forty-eight hours.

Mines Nos. 8 and 9 are drift mines, and the coal is dumped into the railroad cars by inclined planes, which run down the side of the mountain and work by gravity.

These mines show an increased production of 83,302 tons. The estimated value of the total production is $500,000. The total number of tons of coal used at the power plant was 5,786 tons. The Blossburg mines, taken together, are the largest producers in the Territory, having a capacity of 2,000 tons per day. They are located on a branch of the Atchison, Topeka and Santa Fe Railroad, connecting with the main line at Dillon station, and the coal fields of the Raton Coal and Coke Company in this county contain 10,000 acres, on which there are several seams of coal. At present, however, only one seam of coal is being worked. The mines are dry and comparatively free from gas.

Davis Cañon Mine.

[Albert J. Shaw, general manager.]

This mine is located about 1 mile west of the town of Raton, Colfax County, N. Mex. Owned by the Maxwell Land Grant Company and is operated under lease by Albert J. Shaw. This is a new mine opened this year. Kind of coal, bituminous; thickness of vein, 3 feet 8 inches; total output for fiscal year, 5,098 tons; estimated value of output, $10,000; length of drift, 540 feet; value of improvements this year, $5,000; average number of men employed outside, 8; average number of men employed inside, 8; where coal is marketed, Raton, N. Mex.; number of days mine worked, 240.

RECORD OF INSPECTION.

October 26, 1899.—On this date I visited and inspected the mine known as the Davis Cañon mine. At the time of my visit to the mine a drift had been driven in on the vein of coal a distance of 165 feet, and I found the workings in good condition.

January 27, 1900.—On this date I again inspected the mine known as the Davis Cañon mine. I measured 1,400 cubic feet of air entering the mine per minute and measured 1,505 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings well timbered and in good condition.

March 28, 1900.—On this date I again inspected the mine known as the Davis Cañon mine. I measured 2,250 cubic feet of air entering the mine per minute and measured 2,520 cubic feet of air returning per minute. I found No. 2 left room in a dangerous condition on account of not being properly timbered, and ordered the pit boss to have the room timbered before any more mining was allowed to be done in said room. The pit boss informed me that he would see that the room was properly timbered before any more mining was done in said room.

May 25, 1900.—On this date I again inspected the mine known as the Davis Cañon mine. I measured 2,660 cubic feet of air entering the mine per minute and measured 3,812½ cubic feet of air returning per minute. I found the workings of the mine in good condition.

Mesa Mine.

[Honeyfield Brothers, operators.]

This mine is located about 7 miles east of the town of Raton, Colfax County, N. Mex. Kind of coal, bituminous; thickness of vein, 5 feet; total output for fiscal year (estimated), 300 tons; estimated value of output, $325; average number of men employed at mine, 5; length of drift, 400 feet; where coal is marketed, Raton, N. Mex.

RECORD OF INSPECTION.

October 27, 1899.—On this date I inspected the mine known as the Mesa mine. I found No. 1 room in a very dangerous condition, and ordered said room timbered before any more mining was done.

This mine closed down soon after the date of the above inspection, and I did not again inspect it during the fiscal year.

Dawson Mine.

[J. B. Dawson, owner and manager.]

This mine is situated about 15 miles in a westerly direction from the town known as Maxwell City, Colfax County, N. Mex. This is a new mine, which has been worked in a small way during the last fiscal year. Kind of coal, bituminous; thickness of vein, 9 feet; total output for fiscal year, 300 tons; estimated value of output, $450; length of drift, 300 feet; number of men employed in mine, 2; where coal is marketed, Springer, Colfax County, N. Mex., and vicinity; number of days mine worked, 60.

RECORD OF INSPECTION.

November 21, 1899.—On this date I visited and inspected the mine known as the Dawson mine, in response to a request from J. B. Dawson, owner and manager of the mine, to visit the mine. I found two entries driven in on the vein of coal a distance of 130 feet each. I found the workings well timbered and in good condition.

I then instructed Mr. Dawson as to how the mine should be worked in order to comply with the mining laws, and explained to him about the necessity of having a second opening made for an outlet, according to the provisions of the fifth section of the United States Mining Laws. Mr. Dawson informed me that he would have a second opening driven as soon as possible. Owing to the long distance the mine is located from the railway and the few miners employed therein, I did not deem it necessary to visit the mine again during the fiscal year.

SMITH MINE No. 2.

[Albert G. Shaw, lessee and general manager.]

This mine is located about 1 mile north of the town of Raton, Colfax County, N. Mex., and is owned by the Maxwell Land Grant Company, and is operated under lease by Albert G. Shaw. The product of this mine is hauled in wagons to the town of Raton, N. Mex., and there sold to the domestic trade. The capacity is about 20 tons per day. The mine is ventilated by a furnace. This mine closed down December 31, 1899. From June 30 until December 31 there were produced from the mine 1,890 tons of coal, the estimated value of which is $3,780.

RECORD OF INSPECTION.

October 25, 1899.—On this date I was notified by a miner that a man by the name of Hopkin Hopkins was killed in the Smith mine No. 2 on the night of October 24. (See report under head of "Fatal accidents.") On this same date I inspected all the underground workings of the mine and found the workings well ventilated and in good condition.

November 18, 1899.—On this date I again inspected the mine known as the Smith mine No. 2. I measured 1,440 cubic feet of air entering the mine per minute and measured 1,512 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the workings in good condition; and as this mine closed down on December 31 I did not inspect the mine any more during the year.

RIO ARRIBA COUNTY.

MONERO MINE No. 1.

[J. H. Crist, general manager; E. A. Fiske, president.]

This mine is located at Monero, Rio Arriba County, N. Mex., on the Denver and Rio Grande Railroad; is owned and operated by the Rio Arriba Coal Company. Kind of coal, bituminous; thickness of vein, 3 feet 10 inches; total output for fiscal year, 22,000 tons; estimated value of output, $28,000; depth of slope, 1,700 feet; value of improvements this year, $4,000; average number of men employed outside, 7; average number of men employed inside, 18; average number of boys employed inside, 2; where coal is marketed, Denver and Rio Grande Railroad Company; number of days mine worked, 275; number of tons of coal used at mine, 800.

RECORD OF INSPECTION.

September 18, 1899.—On this date I was engaged in inspecting the mine known as the Monero mine No. 1. I measured 7,590 cubic feet of air entering the mine per minute, and measured 7,700 cubic feet of air returning per minute. I then inspected the workings on No. 1 left entry, which was the only entry being worked, and found only 600 cubic feet of air traveling per minute at the face of the entry. I found the air returning from the main intake into the old abandoned workings before reaching the face of the places being worked. I ordered the pit boss to make a thorough examination of the Craig slope, which is the intake, and to have all places along the slope where the air was escaping to the return air course before reaching the workings at the bottom of the mine closed up and made air-tight, so as to force all the air down to the face of No. 1 left entry and around the faces of all working places on said entry. The pit boss informed me that my instructions would be complied with immediately.

December 14, 1899.—On this date I again inspected the mine known as the Monero mine No. 1. I measured 10,440 cubic feet of air entering the mine per minute, and measured 10,800 cubic feet of air returning per minute. I then inspected the underground workings of the mine.

At the face of No. 1 left entry, where all work was being performed, I measured 2,240 cubic feet of air traveling per minute. I then inspected the main air course and found it partially filled with rock and ordered the pit boss to have the air course cleared of all falls of rock and to keep it in good condition.

February 14, 1900.—On this day I again inspected the mine known as Monero mine No. 1. I measured 6,800 cubic feet of air entering the mine per minute and measured 7,030 cubic feet of air returning per minute. I then inspected the underground workings of the mine, and at the face of No. 1 left entry I found only 840 cubic feet of air traveling per minute. I then inspected the air course leading to the entry and which supplies No. 1 left entry with air and found it in bad condition, and ordered the general manager to have the air course cleared of all falls of rock and put into good condition.

February 15, 1900.—I again visited Monero mine No. 1 for the purpose of ascertaining if the main air course was being put into good condition. I found men working on the air course, clearing it of all falls of rock and timbering the same. The distance vertically between No. 1 and 2 mines is about 30 feet, and a new slope is being driven from No. 1 mine to connect with No. 2 mine, and the general manager informed me that when No. 2 vein of coal was encountered with the new slope and two entries were driven a short distance on the vein of coal No. 1 mine would be abandoned.

April 25, 1900.—On this date I again inspected the mine known as the Monero mine No. 1. I measured 8,800 cubic feet of air entering the mine per minute, and measured 9,520 cubic feet of air returning per minute. I found the workings of the mine in fair condition.

MONERO MINE NO. 2.

[J. H. Crist, general manager; E. A. Fiske, president.]

This mine is located at Monero, Rio Arriba County, N. Mex., on the Denver and Rio Grande Railroad. Owned and operated by the Rio Arriba Coal Company. Kind of coal, bituminous; thickness of vein, 3 feet 10 inches; total output for fiscal year, 8,000 tons; estimated value of output, $12,000; depth of slope, 1,000 feet; value of improvements this year, $2,500; average number of men employed outside, 4; average number of men employed inside, 9; average number of boys employed inside, 2; where coal is marketed, Denver and Rio Grande Railroad Company; number of days mine worked, 260; number of tons of coal used at mine, 400.

RECORD OF INSPECTION.

September 16, 1899.—On this date I inspected the Monero mine No. 2. I measured 1,500 cubic feet of air entering the mine per minute, and measured 1,575 cubic feet of air returning per minute. I then inspected the workings along the slope and found the air returning to the return air course before reaching the workings down at the bottom of the slope. I ordered all openings along the right of the slope (except the last opening or entry) closed up and made air-tight, so as to force all the air down to the bottom of the slope and around to the face on the working places. The pit boss informed me that the work would be commenced at once.

December 15, 1899.—On this date I again inspected the mine known as the Monero mine No. 2. I measured 2,880 cubic feet of air entering the mine per minute, and measured 3,000 cubic feet of air returning per minute. I then inspected the underground workings of the mine and found the air returning to the return air course before reaching the face of the working places. I ordered the pit boss to brattice up the neck of the rooms which are driven off from the slope, so as to force the air around the face of the working places in the mine.

February 12, 1900.—On this day I again inspected the mine known as the Monero mine No. 2. I measured 4,080 cubic feet of air entering the mine per minute, and measured 4,176 cubic feet of air returning per minute. I then inspected the working places throughout the mine and found some gas (fire damp) at the face of No. 1 left room, and ordered the pit boss to have more air conducted up to the face of the room, so as to clear the room of gas. I also instructed the pit boss to examine the working places for gas every morning before allowing the miners to enter the mine.

February 15, 1900.—On this date I again visited the Monero mine No. 2 for the purpose of ascertaining if my orders of February 12 had been carried out. I found that a much larger volume of air had been conducted to the face of No. 1 left room, and the room was clear of gas.

KUTZ MINE.

[G. W. Kutz, owner and operator.]

This is a new mine which has been opened up this year, and is situated about one-fourth of a mile from Monero post-office in an easterly direction. This mine is located in Rio Arriba County, N. Mex., owned and operated by G. W. Kutz. Kind of coal, bituminous; thickness of vein, 3½ feet; total output for fiscal year, 4,000 tons; estimated value of output, $5,000; depth of slope, 400 feet; value of improvements, $4,500; average number of men employed outside, 5; average number of men employed inside, 12; where coal is marketed, Denver and Rio Grande Railroad Company; number of days mine worked, 300.

RECORD OF INSPECTION.

September 19, 1899.—On this date I was inspecting the mine known as the Kutz mine. At the time of my visit a slope had been driven down on the vein of coal, a distance of 140 feet, and an air shaft had been sunk down a distance of 52 feet, but connection had not been made between the air shaft and the slope and I took no air measurements. I found the workings in good condition.

February 13, 1900.—On this date I again inspected the mine known as the Kutz mine. At the time of my visit to the mine there were only three miners employed therein and I took no air measurements. On this date the workings on the slope and the air shaft had been connected.

MCBROOM'S MINE.

[Jas. W. McBroom, general manager.]

This mine is located about 1½ miles in an easterly direction from the town of Monero, Rio Arriba County, N. Mex. Owned and operated by the McBroom Brothers. This is a new mine which has been operated in a small way since September 1, 1899. Kind of coal, bituminous; thickness of vein, 3 feet; total output for fiscal year, 1,706 tons; estimated value of outpout, $2,388.40; length of drift, 200 feet; value of improvements, $1,200; number of men employed outside, 1; number of men employed inside, 3; where coal is marketed, Creede, Colo., and New Mexico; number of days mine worked, 250.

RECORD OF INSPECTION.

February 13, 1900.—On this date I inspected the mine known as the McBroom's mine. At the time of my visit to the mine a drift had been driven in on the vein of coal a distance of 200 feet, and one entry had been driven off to the left of the slope to a distance of 200 feet. I found the workings in fair condition.

On account of there being only 3 men employed in this mine I did not deem it necessary to visit the mine again during the fiscal year.

SOCORRO COUNTY.

CARTHAGE MINE.

[A. H. Hilton, general manager; Hilton & Luerra, operators.]

This mine is located about 12 miles in a southeasterly direction from the town of San Antonio, Socorro County, N. Mex. The coal is hauled in wagons to San Antonio, where it is loaded on the cars and shipped to different towns along the Atchison, Topeka and Santa Fe Railroad. This mine has a capacity of about 50 tons per day, and is ventilated by an air shaft. Considerable development work has been done on the mine this year, and the coal is a very good quality of bituminous coal, but the cost of hauling the coal 12 miles by wagon to the railway station is too great an expense to enable the operators to compete successfully with other mines which are situated more conveniently to market. Kind of coal mined, bituminous; thickness of vein, 4 feet 6 inches; total output for fiscal year, 6,000 tons; estimated value of output, $12,000; length of slope, 2,000 feet; value of improvements this year, $1,000; average number of men employed outside, 3; average number of men employed inside, 12; average number of boys employed outside, 1; number of days mine worked, 270.

RECORD OF INSPECTION.

January 30.—On this date I inspected the mine known as the Carthage mine. I measured 3,150 cubic feet of air entering the mine per minute and measured 3,225 cubic feet of air returning per minute. I then inspected all of the underground workings of the mine. I found the miners working too far in advance of the air in all the rooms, also in the straight entry, and ordered Mr. Luerra, who is foreman at the mine, to have crosscuts driven at the face of the workings, and he informed me that he would have crosscuts driven at once. Otherwise I found the mine in good condition.

March 30, 1900.—On this date I called on Mr. A. H. Hilton, at San Antonio, N. Mex., who is one of the parties interested in operating the Carthage coal mine. He informed me that the mine was not being operated, and would not be until coal bins and screens were erected at the mine, which would take considerable time, and for that reason I did not visit the mine any more during the year.

MINES NOT IN OPERATION.

Hartsell mine, Colfax County, not operated this year.
Smith mine No. 1, Colfax County, not operated this year.
Waldo mine, Santa Fe County, not operated this year.
Miller Gulch mine, Santa Fe County, not operated this year.
Canavan & Bailey mine, Bernalillo County, not operated this year.
Sunshine mine, Bernalillo County, not operated this year.
Monero mine No. 3, Rio Arriba County, not operated this year.
Lumberton mine, Rio Arriba County, not operated this year.

MINES ABANDONED THIS YEAR.

Crown Point, Bernalillo County, N. Mex.
Smith mine No. 2, Colfax County, N. Mex.
Mesa mine, Colfax County, N. Mex.
Latamore mine, Colfax County, N. Mex.

NEW MINES OPENED THIS YEAR.

Kutz mine, Rio Arriba County, N. Mex.
Dawson mine, Colfax County, N. Mex.
McBroom's mine, Rio Arriba County, N. Mex.
Davis Canon mine, Colfax County, N. Mex.
Akers mine No. 4, Lincoln County, N. Mex.
Ayers mines, Nos. 7 and 8, Lincoln County, N. Mex.

Table showing name of mine, method of working, ventilation, power, etc.

Name of mine.	Method of working.	Ventilation.	Power.
Crown Point	Double compartment shaft	Fan	Steam.
Gallup	Slope, double entry, room and pillar	do	Do.
Otero	Slope, single entry, room and pillar	do	Do.
Rocky Cliff	Drift, single entry, room and pillar	Furnace	Mules.
Blossburg mines	Drift, double entry, room and pillar	Fans	Electricity.
Mesa mines	Drift, single entry, room and pillar	Air shaft	Horse.
Smith mine No. 2	do	Furnace	Do.
Monero, Nos. 1 and 2	Slope, single entry, room and pillar	do	Steam.
Carthage	do	Air shaft	Horse.
Cook & White	Slope, double entry, room and pillar	Two fans	Steam.
Lucas	do	Fan	Do.
Catalpa	do	do	Do.
W. A. Clark	do	Air shaft	Electricity.
Thatcher	do	Fan	Steam.
Stewart	Slope, single entry, room and pillar	Air shaft	Horse.
Union	do	do	Steam.
Old Abe	Single entry, room and pillar	Natural	Horse.
Akers mines, Nos. 1 and 4.	Slope and 3-entry system	Fans	Steam
Ayers	do	Furnace	Do.
Kutz	Single entry, room and pillar	do	Horse.
McBroom	do	Natural	Do.
Omara	Slope, single entry, room and pillar	Air shaft	Whim.
Davis Canon	Drift, single entry, room and pillar	Furnace	Mules.
Dawson	do	Natural	Horse.

Road between the Towns of Las Cruces and Mesilla.

SAN JUAN COUNTY.

I forwarded statistical blanks to the parties who operated coal mines during the fiscal year ended June 30, 1899, in San Juan County, N. Mex., but no report has been received from the operators. During the fiscal year ended June 30, 1899, there was produced in San Juan County 810 tons of coal.

SANTA FE COUNTY.

Analysis of coal from the Cook & White mine of the Colorado Fuel and Iron Company.

[Made by W. D. Church, December 2, 1893.]

Coal from Madrid, N. Mex., Cook & White mine:		
Water	per cent..	2.00
Volatile matter	do....	39.00
Fixed carbon	do....	53.76
Mineral ash	do....	5.24
Total		100.00
Coke	per cent..	59.00
Character of coke, strong and tough.		
Color of ash, light yellowish gray.		
Character of ash, soft and light.		
Sulphur (as sulphide)	per cent..	.010
Sulphur (as sulphate)	do....	.022
Phosphorus	do....	.006
Specific gravity	do....	1.410
One cubic foot weighs	pounds..	88.125

Analysis of mineral ash:		
Silica	per cent..	26.93
Alumina	do....	32.41
Oxide of iron	do....	3.96
Calcium oxide	do....	24.68
Magnesium oxide	do....	10.32
Calcium sulphate	do....	.21
Alkalies and loss	do....	1.49
Total		100.00

COLFAX COUNTY.

Coal from Raton Coal and Coke Company:		
Water	per cent..	.75
Volatile matter	do....	34.40
Fixed carbon	do....	56.93
Mineral ash	do....	7.92
Total		100.00
Coke	per cent..	64.85
Character of coke, very strong and tough.		
Color of ash, very light ocher.		
Character of ash, soft and light.		
Sulphur (as sulphide)	per cent..	.016
Sulphur (as sulphate)	do....	.022
Phosphorus	do....	.014
Specific gravity	do....	1.291
One cubic foot weighs	pounds..	88.690

Analysis of mineral ash:		
Silica	per cent..	44.16
Alumina	do....	39.28
Oxide of iron	do....	2.95
Calcium oxide	do....	7.41
Magnesium oxide	do....	3.27
Sulphate of calcium	do....	.41
Alkalies and loss	do....	2.52
Total		100.00

Names and addresses of superintendents or managers of the mines of the Territory.

Name of mine.	Post-office.	Officers.
Gallup	Gallup, N. Mex	W. M. Weaver, general manager; Hugh McGinn, superintendent.
Catalpa	do	Do.
Crown Point	do	Do.
Otero	do	Alex. Bowie, general manager; John Stewart, superintendent; Jas. W. Bowie, mining engineer.
Thatcher	do	Do.
W. A. Clark	Clarkville, N. Mex	W. L. Bretherton, agent.
Rocky Cliff	Gallup, N. Mex	Stephen Canavan, manager.
Stewart	do	William Stewart, manager.
Union	do	J. C. Spears, president.
Blossburg mines	Gardiner, N. Mex	J. Van Houten, vice-president; J. A. Wiggs, superintendent.
Davis Canon mine	Raton, N. Mex	Albert J. Shaw, general manager.
Dawson mine	Dawson, N. Mex	J. B. Dawson, owner.
Cook & White	Madrid, N. Mex	H. J. Elliott, superintendent.
Lucas	do	Do.
Omara	Santa Fe, N. Mex	Frederick Muller, manager.
Monero, Nos. 1 and 2	Monero, N. Mex	J. H. Crist, general manager.
Kutz	Lumberton, N. Mex	Geo. W. Kutz, owner.
McBroom's	Monero, N. Mex	J. C. McBroom, manager.
Carthage	San Antonio, N. Mex	A. H. Hilton, general manager.
Old Abe mine	White Oaks, N. Mex	John Y. Hewitt, general manager.
Akers, Nos. 1 and 4	Capitan, N. Mex	W. P. Thompson, general manager.
Ayers, Nos. 2, 7, and 8	do	Do.

THE COAL TRADE.

During the past fiscal year the coal trade has been exceedingly brisk, and although the total production of coal shows a marked increase the demand for the coal produced in the Territory has been much greater than the supply. At all mines in the Territory, except the very small mines, the operators were unable to fill more than two-thirds of the orders received. On account of the scarcity of miners the operators were unable to meet the demand for coal. Had it not been for the great scarcity of miners the increase in total production for the fiscal year would have been many tons greater.

Production of coal.

Name of mine.	Men employed.		Tons of coal mined.		Estimated value of product, 1899-1900.
	1898-1899.	1899-1900.	1898-1899.	1899-1900.	
Bernalillo County:					
Gallup	275	225	151,525	180,000	$250,000
Catalpa	105	112	58,061	80,000	110,000
Crown Point	123	44	45,490	40,000	55,000
Union	0	12	0	8,000	5,000
Otero	172	183	96,473	89,000	139,724
Thatcher	33	89	11,311	32,000	47,000
W. A. Clark	90	238	46,986	90,050	124,269
Rocky Cliff	10	50	5,000	28,100	39,340
Stewart	9	18	2,000	6,000	10,000
Total	817	971	416,846	548,150	780,333
Colfax County:					
Blossburg, Nos. 4 and 6	240	333	308,316	391,618	587,427
Blossburg, No. 8	0	114	0		
Blossburg, No. 9	0	51	0		
Smith, No. 2	6	7	3,631	1,890	3,780
Mesa	5	5	1,100	300	450
Davis Canon	0	16	0	5,098	10,000
Dawson	0	1	0	300	450
Total	251	527	313,047	399,206	602,107
Santa Fe County:					
Cook & White	285	128	145,000	67,117	100,675
Lucas	200	97	45,000	41,595	114,385
Omara	7	5	1,139	1,500	3,000
Total	492	230	191,139	110,212	218,060

Production af coal—Continued.

Name of mine.	Men employed.		Tons of coal mined.		Estimated value of product, 1899-1900.
	1898-1899.	1899-1900.	1898-1899.	1899-1900.	
Rio Arriba County:					
Monero, Nos. 1 and 2	45	42	39,000	30,000	$40,000
Kutz	0	17	0	4,000	5,000
McBroom's	0	4	0	1,706	2,388
Total	45	63	39,000	35,706	47,388
Socorro County:					
Carthage	3	17	2,400	6,000	12,000
Lincoln County:					
Old Abe	4	10	1,469	4,246	9,649
Akers, Nos. 1 and 4	17	142	0	70,587	141,174
Ayers, Nos. 2, 7, and 8	29	52	0	13,227	26,454
Total	50	204	1,469	88,060	177,277
San Juan County:					
Bruce	1	0	100	0	0
Thomas	2	0	150	0	0
Stevens	1	0	310	0	0
Morgan	2	0	250	0	0
Total	6	0	810	0	0

Counties.	Output for fiscal year ended June 30, 1900.	Estimated value.	Percentage of output for Territory.
	Tons.		*Per cent*
Bernalillo	548,150	$780,333	46.582
Colfax	399,206	602,107	33.713
Rio Arriba	35,706	47,388	3.818
Lincoln	88,060	177,277	7.494
Santa Fe	110,212	218,060	8.335
Socorro	6,000	12,000	.058
Total	1,187,334	1,837,165	100.000

The production for the fiscal year ending June 30, 1900, was 1,187,334 tons, which was an increase of 138,300 tons over the total production of the previous fiscal year.

The total estimated value of the production for the fiscal year ended June 30, 1900, was $1,837,165, being an increase of valuation of $236,577 over the fiscal year ending June 30, 1899.

EMPLOYEES.

The following tabulated statement shows the number of miners, day men, and boys employed in and about the coal mines of the Territory of New Mexico during the fiscal year ended June 30, 1900:

Counties.	Miners.	Boys.	Day men.	Total.
Bernalillo	813	28	130	971
Colfax	459	20	48	527
Santa Fe	148	34	48	230
Rio Arriba	42	5	16	63
Socorro	12	1	4	17
Lincoln	184	2	21	207
Total	1,658	90	267	2,015

In the column headed "Day men" are included all men employed in and about the mines in any capacity except those actually engaged in mining.

During the fiscal year ended June 30, 1899, there were employed in and about the mines of the Territory 1,507 miners, 44 boys, and 329 day men, making a total of 1,880 employees.

During the fiscal year ended June 30, 1900, as shown by the above tabulated statement, there were employed in and about the mines of the Territory 1,658 miners, 90 boys, 267 day men, making a total of 2,015 employees.

A comparison of the two fiscal years shows an increase of 151 miners, 46 boys, but a decrease of 62 day men, making a total increase of 135 in the total number of employees for the fiscal year ended June 30, 1900.

Used at mines.

	Tons.
Bernalillo County:	
Gallup	5,000
Catalpa (principally slack)	1,500
Crown Point (principally slack)	1,500
Union	50
Otero (principally slack)	500
Thatcher (principally slack)	350
W. A. Clark (principally slack)	1,900
Rocky Cliff	None
Stewart	None
Colfax County:	
Blossburg, Nos. 4, 6, 8, 9	5,786
Smith, No. 2	None
Mesa	None
Davis Cañon	None
Dawson	None
Santa Fe County:	
Lucas (principally slack)	4,875
Cook & White (principally slack)	5,892
Omara	None
Rio Arriba County:	
Monero, Nos. 1 and 2 (principally slack)	1,200
Kutz	None
McBroom's	None
Socorro County:	
Carthage	None
Lincoln County:	
Old Abe	None
Akers	750
Ayers	100

PRODUCTION OF COKE.

On July 10, 1900, I wrote the following letter:

SILVER CITY, N. MEX., *July 10, 1900.*

SIR: I am now preparing my annual report of the coal mines of New Mexico, and as your company has had considerable coke made in the Territory, I want you to please give me the number of tons of coke made at Gardiner, also at Waldo ovens; and send analysis of coke if you have it; also name of mines which the coke was made from, and locality of mines; where coke is marketed, and value of coke at ovens. Hoping you will forward this data as soon as possible, I remain,

Very respectfully, yours,

JOHN W. FLEMING,
United States Mine Inspector

JOHN T. KEBLER, Esq.,
General Superintendent of Colorado Fuel and Iron Co., Denver City, Colo.

In reply to the above I received the following letter:

DENVER, COLO., *July 23, 1900.*

DEAR SIR: Complying with yours of July 10 and 16, I beg to report as follows:

	Tons
Production of the Waldo coke ovens for the year ending June 30, 1900	21,953.50
Production of the Gardiner coke ovens for the year ending June 30, 1900	18,310.80

We operated the Gardiner ovens entirely until March, 1900. We only operated them part of April and part of May, and turned them back to the Raton Coal and Coke Company in June.

The coke made at both of these ovens is from Starkville slack, Starkville mine, situated in Las Animas County, Colo., on the Atchison, Topeka and Santa Fe Railway.

Yours, very truly,

JOHN T. KEBLER.

Mr. JOHN W. FLEMING,
United States Mine Inspector, Silver City, N. Mex.

The coke made from the Starkville mine, of Las Animas County, Colo., runs from 85 to 87 per cent in fixed carbon; 11 to 13 per cent in ash; 1 per cent in moisture, and 0.75 per cent in volatile matter. It takes about 1.55 tons of coal to make 1 ton of coke.

The production of coke from the Raton Coal and Coke Company's ovens, after the time the Colorado Fuel and Iron Company stopped making coke, up to June 30, 1900, amounted to 2,539 tons.

The coke produced was shipped and sold to the different smelting plants in New Mexico, Arizona, Old Mexico; also to the plants in El Paso, Tex.

The total number of tons of coke made in the Territory during the fiscal year was 42,803.30 tons.

FATAL ACCIDENTS.

During the fiscal year there were reported to me as mine inspector 15 fatal accidents, the causes of which were as follows: By fall of rock, 4; by fall of coal, 4; by fall of slate, 1; by suffocation, 1; by pit cars, 3; by powder explosion, 2.

The following table shows the number of tons of coal mined for each life lost:

County.	Mined.	Lives lost.	Coal mined for each life lost.
	Tons.		*Tons.*
Bernalillo	548,150	11	49,831$\frac{9}{11}$
Colfax	399,206	2	199,603
Rio Arriba	35,706	0	....
Lincoln	88,060	1	88,060
Santa Fe	110,212	1	110,212
Socorro	6,000	0	....
Total	1,187,334	15	....

Total number of tons mined in Territory	1,187,334
Total number of lives lost in Territory	15
Total number of tons mined in Territory for each life lost	79,155$\frac{3}{5}$

NONFATAL ACCIDENTS.

During the fiscal year there were reported to me as mine inspector 25 nonfatal accidents, the causes of which were as follows: By fall of rock, 13; by pit cars, 4; by fall of coal, 5; by being caught between bumpers, 1; by bull-wheel, 1; by being kicked by mule, 1.

The following table shows the number of tons of coal mined for each nonfatal accident:

County.	Mined.	Accidents.	Coal mined for each nonfatal accident.
	Tons.		*Tons.*
Bernalillo	548,150	9	60,905$\frac{5}{9}$
Colfax	399,206	10	39,920$\frac{6}{10}$
Rio Arriba	35,706	0	....
Lincoln	88,060	3	29,353$\frac{1}{3}$
Santa Fe	110,212	3	36,737$\frac{1}{3}$
Socorro	6,000	0	....
Total	1,187,334	25	....

Total number of tons mined in Territory	1,187,334
Total number of nonfatal accidents	25
Total number of tons mined in Territory for each nonfatal accident	47,493$\frac{9}{25}$

Accidents of a fatal character reported to me as mine inspector for the fiscal year ended June 30, 1900, showing where accidents occurred, date, name of person killed, and the cause of death:

Where accident occurred.	Date.	Name.	Character of injury.	Cause of death.
Thatcher mine, Gallup, N. Mex.	July 17, 1899	John B. Larmour	Leg broken and injured internally.	Fall of top coal.
	Nov. 6, 1899	Conrad Johnson	Neck broken and body crushed.	Fall of rock.
W. A. Clark mine, Clarkville, N. Mex.	Nov. 29, 1899	Michael Rosqualona	Body crushed	Do.
	Dec. 23, 1899	Atanacio Lopez	Skull broken and other injuries.	Fall of coal.
Otero mine, Gallup, N. Mex.	Apr. 24, 1900	John Cominolo	Neck broken	Fall of top coal.
	Mar. 31, 1900	Thos. F. McGrail	Collar bones broken; chest caved in.	Do.
Smith mine No. 2, Raton, N. Mex.	Oct. 24, 1899	Hopkin Hopkins	Head mashed	Fall of rock.
Cook & White mine, Madrid, N. Mex.	Dec. 7, 1899	Thos. Mullen	Head and breast crushed.	Fall of slate.
Rocky Cliff mine, Gallup, N. Mex.	Feb. 13, 1900	Manuel Torrez	Overcome by powder smoke.	Suffocated.
Blossburg mine No. 8, Gardiner, N. Mex.	Mar. 25, 1900	Barney Pezzoti	Body crushed	Fall of rock.
Catalpa mine, Gallup, N. Mex.	Apr. 7, 1900	Anton Vicich	Neck broken; injured internally.	Pit cars.
Akers mine No. 4, Capitan, N. Mex.	May 28, 1900	Daniel Salmon	Body crushed	Do.
Gallup mine, Gibson, N. Mex.	Sept. 22, 1899	John Barrett	do	Do.
	June 13, 1900	Chas. Gracey	Skull fractured; badly burned.	Powder explosion.
	June 13, 1900	John Calcaterra	do	Do.

RECORD OF FATAL ACCIDENTS.

THATCHER MINE.

July 17, 1899.—John B. Larmour, age 30 years, a miner, nativity American, was injured in the Thatcher mine, room No. 9. Cause, fall of top coal. He was working in the Thatcher mine; there was a slip running along the face of the room just where this coal was standing. He knew the coal was not safe to work under, and tried to pull it down, but it was a little hard to get down and he started to do some work underneath it. While he was working it came down on him and caught him from the waist line down, injuring him as heretofore stated. He died from his injuries July 20, at about 2 o'clock p. m. No coroner's inquest held.

November 6, 1899.—Conrad Johnson, about 41 years of age, nativity Sweden, occupation miner, was injured in the Thatcher mine, in what is known as the Johnson entry on November 6, 1899, at about 1.45 o'clock p. m. His neck was broken, also one arm and leg, and he was severely crushed in the chest, and killed instantly. On the morning of November 7 I hired a conveyance and drove to the Thatcher mine, and upon investigation I found that Conrad Jonnson, who was employed as a miner in the mine and was working in the first right entry, known as the Johnson entry, had been killed while loading a car of coal. I went down into the mine where the fatal accident had occurred, and found that the deceased had been killed while loading a car of coal at the face of the entry by a fall of rock from the roof of the entry. He, Conrad Johnson, and his brother Gus were working together, driving entry, and his brother Gus states that they had sounded the roof of the entry before commencing to load the coal, and were satisfied that it was perfectly safe to work under; but while loading the car the rock fell, killing his brother almost instantly.

Copy of coroner's inquest.

[Precinct No. 27.]

TERRITORY OF NEW MEXICO, *County of Bernalillo:*

We, the justice of the peace and jury who sat upon the inquest held this 7th day of November, 1899, on the body of Conrad Johnson, found in precinct No. 27, county of Bernalillo, find that the deceased came to his death by reason of a fall of rock in the Thatcher mine, while deceased was employed in said mine as a miner, driving entry, and that the cause of said death was accidental, and we find that there can be no blame attached to anyone for the cause of said death except the deceased.

THEO. MAXWELL, *J. P.*
E. L. WATKINS.
GEORGE L. BOLTON.
GEORGE W. HIGHT.
JOHN OSBORNE.
CHAS. MCKITTRICK.
FRED FINGER.

I do hereby certify that the above is a true copy of the verdict rendered in said inquest.

THEO. MAXWELL, *J. P.*

November 29, 1899.—Michael Rosqualona, age 27 years, an Italian miner, was injured in No. 3 east entry of the W. A. Clark coal mine on the 29th day of November, 1899, at about 8.30 o'clock a. m. His neck was broken by a fall of rock.

Copy of coroner's report.

CLARKVILLE, *Bernalillo County, N. Mex.:*

We, the undersigned, justice of the peace and jury who sat upon the inquest held this 29th day of November, 1899, on the body of Michael Rosqualona, find that the deceased came to his death by reason of being crushed under a fall of rock from the roof in the Clarkville mine, where deceased was employed mining coal, and that said death was accidental, and that no person or persons were responsible for his death except the deceased himself, it being a case of neglect on the part of the deceased.

THEODORE MAXWELL, *J. P.*
R. H. EDMONDSON.
G. W. CHURCHILL.
SAM TOVIERI.
JOS. SCHOLD.
JOHN BALNECK.
T. A. TODIN.

December 23, 1899.—Atanacio Lopez, age 23, nativity New Mexico, occupation coal loader, was injured in the W. A. Clark mine at Clarkville, N. Mex., in the first east entry, room No. 16, on the 23d day of December, 1899, at about 8 o'clock p. m. His injuries were as follows: Base of skull broken, limbs broken, and head badly crushed, causing immediate death, by fall of coal.

Copy of coroner's report.

[Precinct No. 27.]

TERRITORY OF NEW MEXICO, *County of Bernalillo:*

We, the undersigned, justice of the peace and jury who sat upon the inquest held this 23d day of December, 1899, on the body of Atanacio Lopez, who was found dead in precinct No. 30 of Bernalillo County, on the 23d day of December, 1899, find that the deceased came to his death by reason of being crushed under a fall of coal while employed mining coal in the Clarkville mine, and that said killing was accidental and unavoidable, and that no person or persons are criminally responsible for the cause of said death.

THEODORE MAXWELL, *J. P.*
JAMES D. MONTEZ.
M. PLUNKETT.
J. HAGUE.
JOHN SCOTT.
SIMON LANCASTER.
H. S. CHAVEZ.

I certify that the foregoing is a true copy.

THEO. MAXWELL,
Justice of the Peace, Gallup, N. Mex.

March 13, 1900.—Thomas F. McGrail, 38 years of age, nativity Scotch, occupation miner, was injured in the Otero mine, room No. 20, on the first west entry, on the 30th day of March, 1900, at about 11 o'clock a. m. He had both collar blades broken and his chest caved in by a fall of top coal. He was brought out of the mine at about 11.15 a. m. on the 30th of March, 1900, and died about 3 p. m. on the 31st.

April 12 I visited the mine known as the Otero mine. Upon my arrival at the mine the superintendent informed me that Thos. F. McGrail had been injured in the mine on the 30th day of March, at 11 o'clock a. m., by a fall of top coal, and died from the injuries sustained on March 31, at about 3 o'clock a. m. I visited the place where the accident occurred, which was in room 20, on the first west entry, and found that the deceased had undermined the coal for a distance of 8 feet, and left the top coal standing with two loose ends, without putting props up to keep it from falling. The top coal is about 15 inches thick, and while the deceased was working under this top coal a piece of coal fell on him, breaking both collar bones, and injured him in such a way as to cause his death.

April 24, 1900.—John Cominolo, age 30 years, nativity Italian, occupation miner, was injured in the Otero mine, in room No. 20, on the first west entry, on the 24th day of April, 1900, at about 3 o'clock p. m. His neck was broken by a fall of top coal.

Copy of coroner's report.

[Precinct No. 27.]

TERRITORY OF NEW MEXICO, *County of Bernalillo:*

We, the undersigned justice of the peace and jury who sat upon the inquest held on the body of John Cominolo, found in precinct 27 in the county of Bernalillo, find that the deceased came to his death by reason of being crushed by a fall of coal in the Otero mine while employed in said mine as coal miner, and we find that said killing was purely accidental, and that no person or persons are responsible for said death except the deceased, through his own negligence.

THEO. MAXWELL, *J. P.*
E. F. KENNEY,
HOMER TUCKER,
CHAS. HODGE,
FRED W. MEYERS,
A. MCASKILL,
Jurors.

October 24, 1899.—Hopkin Hopkins, age 48 years, nativity Wales, occupation miner, was injured in the Smith mine No. 2 while drawing pillars on the 24th day of October, 1899, at about 7 o'clock p. m., by a fall of rock, causing his death instantly.

Report of coroner's jury.

TERRITORY OF NEW MEXICO, *County of Colfax.*

We, the undersigned justice of the peace and jury who sat upon the inquest held this 25th day of October, 1899, on the body of Hopkin Hopkins, found in the Smith mine No. 2, in Colfax County, N. Mex., on October 24, 1899, find that the deceased came to his death by reason of a cave-in in said mine, caused by his refusal and neglecting to properly timber said mine, although he was ordered to do so and the timber furnished him for that purpose.

CHAS. M. BAYNE, *J. P.*
JAS. H. WALKER,
GEO. J. PACE,
ALVIN C. ASH,
J. W. KENNEDY,
J. R. LITTRELL,
A. C. PRICE,
Jurors.

December 7, 1899.—Thomas Mullen, age 34 years, nativity American, occupation miner, was injured in the Cook & White mine at Madrid, N. Mex., while drawing pillars on No. 1 left entry, by a fall of slate. He was bruised about the head and breast, causing death about two hours after the accident occurred. He was supposed to be taking down a piece of slate, when it fell, crushing him against the face of the coal. He was removed from the mine and attended by Dr. Dodds, and died about two hours after the accident happened, the doctor's opinion being a fracture at base of the brain, which caused his death. In this case there was no coroner's jury, but the justice of the peace—Gus Johnson—examined the place, and concluded no inquest was necessary.

February 13, 1900.—Manuel Torrez, age 38 years, nativity Mexican, occupation coal miner, was injured in the Rocky Cliff mine, at Gallup, N. Mex., in room No. 7, on the second left entry, on the 13th day of February, 1900, at about 5.30 o'clock p. m. He was overcome by powder smoke, and suffocated.

Copy of coroner's report.

TERRITORY OF NEW MEXICO, *County of Bernalillo.*

We, the undersigned justice of the peace and jury who sat upon the inquest held in Gallup precinct No. 30 on the dead body of Manuel Torrez, find that he came to his death by being overcome by powder smoke and coal falling on him while at work in the Rocky Cliff mine on February 13, 1900. It was shooting time in the evening. There were two men working in the one place, and had two shots to fire. They had fired one, and Torrez went back to fire the second. He had lit the second squib, when he got overcome with smoke. Then the second shot went off on him. The accident happened at 5.30 p. m. and he died at 7.30 p. m. Age, 38 years. Leaves a wife and four children.

ARCHIE BROWN, *J. P.*
ED. MORRIS,
BEN THOMAS,
DAVE HEREBINGER,
WM. ARMSTRONG,
J. H. BLACK,
JOHN JACHINA,
Jurors.

March 25, 1900.—Barney Pezzoti, about 28 years of age, nativity Italian, occupation timberman, was injured in the Blossburg mine No. 8, in room No. 2, on the second right entry, on the 25th day of March, 1900, at about 10 o'clock a. m., by a fall of rock, which killed him instantly. This day, Sunday, at 12 m., I was notified by J. L. Wiggs, superintendent of the Blossburg mines, that a man had been killed in the Blossburg mine No. 8. I immediately started for the mine and visited the place where the man had been killed, which was in room No. 2 on the second right entry. I found that Barney Pezzoti, an Italian, whose occupation was that of a timberman, had been filling a pit car with coal, and was working at the face of the room, when a piece of rock, commonly called a "pot," fell from the roof of the room so as to catch the deceased, crushing him and breaking his neck, causing death nearly instantaneously. I found the room well timbered up to within 5½ feet of the face of the coal. I consider that this was one of those accidents which can not be well guarded against, being a slip of rock from an apparently solid roof and up against the face of the coal; and the deceased, being an expert timberman, would have timbered the place had he thought it was in any way dangerous.

Copy of coroner's report.

We, the undersigned justice of the peace and jury who sat upon the inquest held this 25th day of March, 1900, on the body of Barney Pezzoti, found in precinct No. 24, of the county of Colfax, Territory of New Mexico, find that the deceased came to his death by reason of a rock, called by miners a "pot," falling from the roof of room No. 2, second right entry, Blossburg mine No. 8, of the Raton Coal and Coke Company. This rock fell so as to catch the deceased, crushing him and breaking his back, causing death nearly instantaneous.

By the testimony given it is disclosed that the accident was purely accidental and unavoidable, and that the Raton Coal and Coke Company is in no way to blame or responsible for the accident, as the room was well timbered to within 5 feet of the face of the coal, and that the employees who were working near where the accident occurred did everything possible to save him.

GEORGE A. WEYMOUTH, *J. P.*
E. W. ULMER,
CHAS. F. BRIDEWELL,
S. A. DRIVER,
C. H. PLUMB,
RAY HAMMOND,
S. M. ULMER,
Jurors.

April 7, 1900.—Anton Vicich, age 51 years, nativity Austrian, occupation miner, was injured in the Catalpa mine, in room 13, on the third right entry, on the 7th day of April, 1900, at about 1.30 o'clock p. m. He was run over by a pit car; his neck was broken, killing him almost instantly.

Copy of coroner's report.

We, the justice of the peace and jury who sat upon the inquest held this 7th day of April, 1900, on the body of Anton Vicich, found dead at the Catalpa mine, in room No. 13, on the third right entry, find that the deceased came to his death by being run over by a loaded pit car in said mine, while in the employ of the Colorado Fuel and Iron Company, and that said killing was accidental, and that no person or persons are responsible for said death, except the deceased, through his own negligence.

WM. MAXWELL, *J. P.*
JOHN BUCKLEY,
H. S. KENYON,
ALEX. SANFORD,
E. STURGILL,
JOHN F. ADAMSON,
L. B. DAVIS,
Jurors.

I arrived in Gallup on April 11, and on this date I was informed that Anton Vicich had been killed in the Catalpa mine, and the accident occurred on the 7th day of April, 1900. I immediately hired a conveyance and drove to the mine, and in company with the pit boss went down into the mine to the place where the accident had occurred, which was in room No. 13 on No. 3 right entry. I found that the deceased worked in room No. 13 with his partner, and when they had a pit car loaded with coal they lowered it down from the face of the room to the main hauling entrance. In lowering the car they used two hind wheel sprags as brakes to lower the car down, and while loading the car with coal they put two wooden blocks in front of the wheels. When loaded, one man goes in front and pulls out the wooden blocks and the other man puts the sprags in the hind wheels and holds back from behind the car. The cause of this accident was neglect on the part of the deceased or his partner to put in the sprags and lock the two hind wheels, which would cause the car to run very slow down the grade, and when the wooden blocks were taken away from the front wheels the loaded car started quickly and passed over the body of Anton Vicich, breaking his neck and killing him instantly.

May 28, 1900—Daniel Salmon, 35 years of age, an American, occupation coal loader, was injured in the Akers mine No. 4, at Capitan, N. Mex., in room No. 9, No. 1 south entry, on the 28th day of May, 1900, at about 8 o'clock a. m. He was run over by a pit car and seven ribs on left side fractured, partially pressing in on heart and lungs; scalp wound on head; and badly crushed, and died in about thirty minutes after the accident occurred.

J. L. McBroome, being first duly sworn, on oath deposes and says: I am a driver in No. 4 mine. Salmon is a shoveler and loads cars in No. 4. The accident occurred this way. I had pulled the car up to where Salmon was working; I had my side of the car blocked up. I don't know whether there was any sprag there or not. I told Salmon to block up his side and then asked him if he had done it and Salmon said he had. Then I went around the side of the car and unhitched the mule. When I looked around, the car commenced to move and Salmon was in front of the car trying to hold it. I hollered to him to get out of the way, but he didn't either understand me or was too confused to mind. Salmon was with his face toward the car, and as it went faster he fell and the car run on him and jumped the track. I went down to where the car was with a Mexican and lifted one side of it and Salmon crawled from under. He was bleeding from a cut in the head and was trying to wipe the blood off. I told him not to and made him put his pit cap on so as to prevent the blood coming down. I then asked him where his coat and dinner bucket was, so we could leave the mine. Salmon walked two or three steps and then sat down. He said he couldn't walk farther, so the Mexican and myself got the pit car and brought it to him, but he was too weak to get in it; so I went to the mouth of the opening to get help. When I came back with help Salmon was lying down. He lived about half an hour from the time he got hurt.

Copy of coroner's report.

We, the undersigned, justice of the peace and jury who sat upon the inquest held this 28th day of May, A. D. 1900, on the body of Daniel Salmon, found in precinct No. 9 of the county of Lincoln, Territory of New Mexico, find that the deceased came to his death by reason of an accident caused by and of fault of his own carelessness or negligence.

W. C. CHEATHAM, *J. P.*
W. A. VENTERS,
J. F. KROUT,
G. W. TYLER,
M. W. MURRAY,
IRA P. WETMORE,
T. E. WILCOX,
Jurors.

TERRITORY OF NEW MEXICO, *County of Lincoln, ss:*

I, W. C. Cheatham, justice of the peace within and for precinct No. 9, Lincoln County aforesaid, do hereby certify that the above and foregoing is a true and correct copy of the verdict rendered by the jury who sat upon the inquest held this the 28th day of May, A. D. 1900, upon the body of Daniel Salmon, deceased.

W. C. CHEATHAM,
Justice of the Peace, Precinct No. 9, Lincoln County, N. Mex.

June 13, 1900.—John Calcaterra and Charles Gracey, aged 35 and 44, respectively—occupation, coal miners—were injured in the Gallup mine, at Gibson, N. Mex., while working on the main slope on the 13th day of June, 1900, at about 8 o'clock p. m. John Calcaterra was killed instantly, having compound fracture of skull on left side through temple, one on right side of head over ear, and one on lower jaw; also badly burned about head, neck, and arms. His age was 35 years; an Italian by birth. Charles Gracey was killed by compound fracture of the skull near the anterior, and severely burned about head, neck, arms, and hands. He was 44 years of age and a native of Ireland.

On the night of June 13, 1900, at 9.40 p. m., I was notified that two men had been killed who were working on the night shift in the Gallup mine, which mine is being operated by the Colorado Fuel and Iron Company. I immediately hired a conveyance and drove to the mine, and upon my arrival at the mine I met Hugh McGinn, the superintendent, and asked him who the parties were that had been killed. He informed me that they were Charles Gracey and John Calcaterra. The superintendent also informed me that the two men had been working on the main slope and that the accident occurred about 8 o'clock p. m. I then examined the two bodies and found them badly burned about the head, neck, and arms. I then, in company with the pit boss, P. J. O'Neil, and three experienced miners, went down into the mine to the place where the accident had occurred, which was about 2,400 feet down the slope. I found the floor of the slope was wet, and asked the pit boss when he had the slope wet down, and he informed me that the slope was wet down on the night of the 12th. I then made a careful examination of the place where the accident occurred and could find no indication of any fire around there. I found 9½ sticks of giant powder and a box of caps on the slope only 55 feet away from the place where the men had been working, and found a 25-pound keg of black powder about 300 feet from the place, and had there been much of a flame of fire I am satisfied that both the giant and black powder would have been exploded. On the following morning, June 14, I again visited the mine and made a thorough examination along the slope for gas with my safety lamp, but could not find a trace of gas (CH_4), and there has never been any firedamp discovered in the mine.

I then measured the distance from the place where the accident occurred to where the two bodies were found, and the body of Charles Gracey was found 225 feet up the slope from where the shots had been fired, and John Calcaterra was found 375 feet up the slope. I also took an air measurement at the point where the two men had been working, and, although some of the stoppings had been shattered above this point by the concussion and allowed air to escape, I measured 5,400 cubic feet of air traveling per minute, and, the area being 45 feet at this point, such a volume of air would have cleared the slope of any gas had there been any there. The result of my investigation as to the cause of the death of the two men is as follows:

The two men were employed in brushing the main slope and were using giant powder to smash out the short timbers, and I have been informed that they used 6 sticks of giant powder to blow out each set of timbers. Where they had been working I found 3 sets of timbers blown out, and if they had 6 sticks of giant powder under each set of timbers and fired the 3 shots at one time, which I think they did, it is my opinion that their charge of powder was far in excess of what was required to do their work, and that its action had been similar to what is known as a blow-out shot; and it is my opinion that they remained too close to this powder explosion, and as it exhausted its force in a different direction from what they intended it should, they were blown against the roof, floor, and sides of the slope, burned by the powder flame, and choked by the powder smoke and dust which was stirred up by the powder explosion.

The finding of the coroner's inquest held over the bodies of Charles Gracey and John Calcaterra was as follows:

Copy of coroner's report.

TERRITORY OF NEW MEXICO, *County of Bernalillo:*

We, the undersigned, justice of the peace and jury who sat upon the inquest held this 14th day of June, 1900, on the bodies of Charles Gracey and John Calcaterra, found in the precinct No. 30 of the county of Bernalillo, find that the said parties came to their death by reason of an explosion which occurred in the Gallup mine at 8 o'clock p. m., June 13, 1900, and that the cause of such explosion is a mystery which this jury is unable to solve; and we further find that there was no person or persons criminally responsible for said deaths.

THEO. MAXWELL, *J. P.*
JOHN KENNEDY,
RALPH RYMUS,
JOHN C. RUSSELL,
JOHN W. GRAFFES,
WILLIAM MCSPARRON,
JAMES FRY,
Jurors.

September 22, 1899.—John Barrett, age 28 years, native of Ireland, occupation driver, was injured in the Gallup mine at Gibson, N. Mex., on No. 15 left entry, on the 22d day of September, 1899, at about 11 o'clock a. m., by a loaded trip of cars passing over him, killing him instantly. On this date, at about 6 o'clock p. m., I was informed that a man had been killed in the Gallup mine. I immediately went to the office of the Crescent Coal Company, which company was then operating the Gallup mine, and inquired of one of the office men if a man had been killed in the Gallup mine. He informed me that a driver, whose name was John Barrett, had been reported killed. On the morning of the 23d I drove to the Gallup mine, and upon investigation I found that John Barrett, who had been employed as a driver in the mine and was working on the fifteenth left entry on the inclined plane, had been killed. I found the cause of his death to be as follows:

He, John Barrett, deceased, was in the act of jumping into an empty pit car while it was in motion, when he stumbled and fell, and the loaded trip of pit cars, which were coming down the inclined plane, passed over his body, killing him instantly. "A jury composed of P. A. Neal, Jim Corcoran, W. H. Wiessa, J. M. O'Neil, John Orm, Thomas Edmundson, and the justice of the peace, Archie Brown, found that the whole thing was an accident. Witnesses, Charles Keller and James Coniff." The above quotation is a copy of the coroner's jury report as handed to me.

Table of nonfatal accidents.

Name of mine.	Date.	Name.	Character of injury.	Cause.
Blossburg No. 6, Gardiner, N. Mex.	July 28, 1899	Joe Skiles	Fracture of collar bone.	Fall of rock.
	Aug. 10, 1899	Raphael Avolio	Compound fracture of leg.	Do.
	Aug. 28, 1899	Odie Williams	Cut on right leg	Do.
	Sept. 4, 1899	Thomas Lark	Left foot crushed	Caught between bumpers.
	Sept. 13, 1899	Frank Owens	Dislocated shoulder	Fall of rock.
	do	Camilo Giron	Bruised back	Do.
	do	A. Belaskes	Shin bruised	Do.
	Jan. 11, 1900	Frank Devyak	Dislocation of spinal cord.	Do.
	Mar. 29, 1900	Jose Cacios	Dislocated right hip	Do.
	May 10, 1900	Andrew Shields	Right leg broken	Do.
Cook & White mine, Madrid, N. Mex.	Sept. 22, 1899	Thos. Foster	Hand cut off	By bull wheel.

Table of nonfatal accidents—Continued.

Name of mine.	Date.	Name.	Character of injury.	Cause,
Lucas mine, Madrid, N. Mex.	Sept. 25, 1899	W. H. Wake.......	Compound fracture of leg.	Fall of rock.
	Oct. 5, 1899	Thos. Greseuti	Compound dislocation of ankle joint.	Fall of coal.
Ayers mine No. 1, Capitan, N. Mex.	Dec. 1, 1899	John Brunett.....	Injured about the hips .	Fall of rock.
	Dec. 5, 1899	Albert Triftriner .	Broken collar bone.....	Fall of coal.
	Dec. 16, 1899	Demasio Trujillo .	Kneecap broken	Pit car.
Gallup mine, Gibson, N. Mex.	Aug. 22, 1899	Fred Baugh	Leg lacerated	Fall of coal.
	Feb. 16, 1900	John Polinski	Contused leg	Fall of rock.
	Mar. 29, 1900	John Buckley	Lacerated wound	Pit cars.
	May 12, 1900	James Love.......	.....do	Fall of coal.
	June 6, 1900	Joseph Cortese ...	Compound fracture	Do.
	June 2, 1900	John Sheridan....	Fracture of kneecap ...	Pit cars.
Catalpa mine, Gallup, N. Mex.	June 7, 1900	Chas. Bren	Right leg mashed	Do.
Crown Point, Gallup, N. Mex.	Jan. 24, 1900	Al Bernasco	Fracture of right arm ..	Kicked by a mule.
	June 6, 1900	Antone Kowlovie	Lacerated foot..........	Fall of rock.

RECORD OF NONFATAL ACCIDENTS.

BLOSSBURG MINES.

July 28, 1899.—Joe Skiles, a helper on machine, an American, was injured by fall of rock in No. 6 mine. A piece of rock fell from the roof without warning and fractured his collar bone.

August 10, 1899.—Raphael Avolio, an Italian miner, age about 40, was injured in No. 6 mine, in room No. 10, on No. 13, left entry. The injured man was standing on an empty car trying to take down a piece of rock from the roof; more of the rock was loose than he suspected and some of the rock fell on him, causing a compound fracture of leg.

August 28, 1899.—Odie Williams, colored American, age 14, was injured in No. 6 mine, in the diagonal entry, by a fall of rock. A piece of rock slipped from the pillar while he was sitting down, hitting him and causing a cut on right leg.

September 4, 1899.—Thomas Lark, an Englishman, 26 years of age, was injured at No. 6 mine. He was riding the trip as brakeman, with instructions to jump off at a point called the frog. He rode past this point, where the cars are apt to jump. His left foot caught between the bumpers and was crushed.

September 13, 1899.—Frank Owens, a negro, age 32 years, a miner, was injured in No. 6 mine, in room No. 5, on the first right entry. He was running from a piece of sliding rock and struck his shoulder against a car, dislocating his shoulder.

September 13, 1899.—Camilo Giron, a Mexican miner, 40 years of age, was injured in No. 6 mine, in room No. 11, on the fourth left entry. A piece of rock fell from roof close to face of coal, where it was impossible to timber, and bruised his back.

September 13, 1899.—A. Belaskes, a Mexican miner, age 35 years, was injured in No. 6 mine, in room No. 15, on the first left entry. A piece of rock fell from the roof, which was reasonably well timbered, causing a slight bruise on shin.

January 11, 1900.--Frank Devyak, an Austrian miner, age 38, was injured in No. 6 mine, in room No. 7, on No. 1 entry. A "pot" of rock, 3 feet square, 18 inches thick, fell while he was at work, causing fracture and dislocation of spinal cord.

March 29, 1900.—Jose Cacios, a Mexican miner, age 34, was injured in No. 6 mine, in room No. 6, on No. 1 entry. A "pot," or bell-shaped rock, fell near face of coal, dislocating right hip.

May 10, 1900.—Andrew Shields, a negro miner, age 35 years, was injured in No. 4 mine, on the old Blossburg main entry. A piece of rock fell from the roof, breaking his right leg below the knee.

COOK & WHITE MINE.

September 22, 1899.—Thomas Foster, an Englishman, under-ground foreman, 48 years of age, was injured in the Cook & White mine, at the top of No. 3 plane, on No. 2 right cross entry. He had his hand cut off by the bull wheel at the top of the plane. He had his hand on the rope while the engine was in motion, which pulled his hand into the bull wheel and cut it off below the knuckles, leaving thumb on.

LUCAS MINE.

September 25, 1899.—W. H. Wake, an Englishman, miner, age 28 years, was injured in the Lucas mine in room No. 9, on the first dip plane on the fourth right entry. He was injured by a fall of rock, causing compound fracture of left leg, junction of lower and middle third.

October 5, 1899.—Thomas Greseuti, an Italian miner, age 40 years, was injured in the Lucas mine in room No. 7, on the fourth right entry, by a fall of coal, causing compound dislocation of left ankle joint.

AYERS MINE NO. 1.

December 1, 1899.—John Brunett, an Englishman, miner, age 45 years, was injured in Ayers mine No. 1, on the first right entry. A piece of rock in roof, which had been repeatedly sounded and seemed secure, suddenly gave way while he was working underneath it and injured him about the hips.

December 5, 1899.—Albert Triftriner, a German miner, age 35 years, was injured in the Ayers mine No. 1, on the first left entry, by a fall of coal which he was undermining, breaking his collar bone.

December 16, 1899.—Demasio Trujillo, a Mexican laborer, 22 years of age, was injured in the Ayers mine No. 1. Had his kneecap broken and received wounds by being run over with the pit car.

GALLUP MINE.

August 22, 1899.—Fred Baugh, an American miner, age 20 years, was injured in the Gallup mine, in room 7, on No. 11, right entry, by a fall of coal. Coal fell at the face of the room, causing contusions and lacerations of leg and fracture of the small bones of foot.

February 16, 1900.—John Polinski, Austrian miner, age 35 years, was injured in the Gallup mine, in room 24, on No. 11, right entry, by fall of rock, causing badly contused leg (right leg) from knee to foot, ankle being also contused badly; no fracture, however.

March 29, 1900.—John Buckley, an American driver, was injured in the Gallup mine on No. 11, right entry, by being run over by a pit car, causing contused lacerated wound of left foot, with fracture of two of smaller bones of foot and first toe.

May 12, 1900.—James Love, an American miner, age 27 years, was injured in Gallup mine, in No. 11, right entry, by fall of coal, causing contused, lacerated wound, with partial fracture of the small bones of right leg in lower part, and ankle considerably bruised.

June 2, 1900.—John Sheridan, an American, driver, was injured in the Gallup mine on No. 11, right entry, by a runaway trip of cars. He fell on the rail and was caught, causing fracture of patella, right (kneecap), and also various contusions on same leg.

June 6, 1900.—Joseph Cortese, an Italian miner, 37 years of age, was injured in the Gallup mine, in room No. 28, on No. 15, left entry, by fall of coal, causing compound fracture of both bones of the right leg below the knee, with very severe lacerations and contusions.

CATALPA MINE.

June 7, 1900.—Charles Bren, a Russian miner, 39 years of age, was injured in the Catalpa mine, on entry No. 1, by being run over by a pit car, which mashed the bones of his right leg below the knee and soft tissues, causing amputation.

CROWN POINT MINE.

January 24, 1900.—Al Bernasco, an American, driver, 25 years of age, was injured in the Crown Point mine by being kicked by a mule, causing partial fracture of right forearm.

June 6, 1900.—Antone Kowlovie, an Austrian miner, 19 years of age, was injured in the Crown Point mine, in room 24, on No. 8 entry, by a fall of rock, causing contused, lacerated right foot and toes, 3 toes mashed to such an extent that they were amputated.

LAWS GOVERNING THE WORKINGS OF COAL MINES IN THE TERRITORIES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in each organized and unorganized Territory of the United States wherein are located coal mines the aggregate annual output of which shall be in excess of one thousand tons per annum, the President shall appoint a mine inspector, who shall hold office until his successor is appointed and qualified. Such inspector shall, before entering upon the discharge of his duties, give bond to the United States in the sum of two thousand dollars, conditioned for the faithful discharge of his duties.

SEC. 2. That no person shall be eligible for appointment as mine inspector under section 1 of this act who is not either a practical miner or mining engineer, and who has not been a resident for at least six months in the Territory for which he shall be appointed; and no person who shall act as land agent, manager, or agent of any mine, or as mining engineer, or be interested in operating any mine in such Territory shall be at the same time an inspector under the provisions of this act.

SEC. 3. That it shall be the duty of the mine inspector provided for in this act to make careful and thorough inspection of each coal mine operated in such Territory, and to report at least annually upon the condition of each coal mine in said Territory with reference to the appliances for the safety of miners, the number of air or ventilating shafts, the number of shafts or slopes for ingress or egress, the character and condition of the machinery for ventilating such mines, and the quantity of air supplied to same. Such reports shall be made to the governor of the Territory in which such mines are located and a duplicate thereof forwarded to the Secretary of the Interior, and, in the case of an unorganized Territory, directly to the Secretary of the Interior.

SEC. 4. That in case the said mine inspector shall report that any coal mine is not properly constructed or not furnished with reasonable and proper machinery and appliances for the safety of the miners and other employees, it shall be the duty of the governor of such organized Territory, it shall be the duty of the Secretary of the Interior to give notice to tho owners or managers of said coal mine that the said mine is unsafe, and notifying them in what particular the same is unsafe, and requiring them to furnish or provide such additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary to the safety of the miners and other employees within a period to be in said notice named; and if the same be not furnished as required in said notice, it shall be unlawful after the time fixed in such notice for the said owners or managers to operate said mine.

SEC. 5. That in all coal mines in the Territories of the United States the owners or managers shall provide at least two shafts, slopes, or other outlets, separated by natural strata of not less than one hundred and fifty feet in breadth, by which shafts, slopes, or outlets distinct means of ingress and egress shall always be available to the persons employed in said mine. And in case of the failure of any coal mine to be so provided, it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue, as provided in section four of this act, and with the same force and effect.

SEC. 6. That the owners or managers of every coal mine at a depth of one hundred feet or more shall provide an adequate amount of ventilation of not less than fifty-five cubic feet of pure air per second, or thirty-three hundred cubic feet per minute, for every fifty men at work in said mine, and in like proportion for a greater number, which air shall, by proper appliances or machinery, be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases; and all workings shall be kept clear of standing gas.

SEC. 7. That any mine owner or manager who shall continue to operate a mine after failure to comply with the requirements of this act and after the expiration of the period named in the notice provided for in section four of this act, shall be deemed guilty of a misdemeanor, and shall be fined not to exceed five hundred dollars.

SEC. 8. That in no case shall a furnace shaft be used or for the purposes of this act be deemed an escape shaft.

SEC. 9. That escape shafts shall be constructed in compliance with the requirements of this act within six months of the date of the passage hereof unless the time shall be extended by the mine inspector, and in no case shall said time be extended to exceed one year from the passage of this act.

SEC. 10. That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same.

SEC. 11. That an approved safety catch shall be provided and sufficient cover overhead on every carriage used in lowering or hoisting persons; and the mine inspectors shall examine and pass upon the adequacy and safety of all such hoisting apparatus.

SEC. 12. That no child under twelve years of age shall be employed in the underground workings of any mine; and no father or other person shall misrepresent the age of anybody so employed. Any person guilty of violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not to exceed one hundred dollars.

SEC. 13. That only experienced and competent and sober men shall be placed in charge of hoisting apparatus or engines; and the maximum number of persons who may ascend or descend upon any cage or hoisting apparatus shall be determined by the mine inspector.

SEC. 14. That it shall be lawful for any inspector to enter and inspect any coal mine in his district and the work and machinery belonging thereto at all reasonable times, but so as not to impede or obstruct the workings of the mine, and to make inquiry into the state of the mine, works, and machinery, and the ventilation and mode of lighting the same, and into all matters and things connected with or relating to the safety of the persons employed in or about the same, and especially to make inquiry whether the provisions of this act are complied with; and the owner or agent is hereby required to furnish means necessary for such entry, inspection, examination, and inquiry, of which the said inspector shall make an entry in the record of his office, noting the time and material circumstances of the inspection.

SEC. 15. That in all cases of fatal accident a full report thereof shall be made by the mine owner or manager to the mine inspector, said report to be in writing and made within ten days after such death shall have occurred.

SEC. 16. That as a cumulative remedy, in case of the failure of any owner or manager of any mine to comply with the requirements contained in the notice of the governor of such Territory or the Secretary of the Interior, given in pursuance of this act, any court of competent jurisdiction, or the judge of such court in vacation, may, on the application of the mine inspector in the name of the United States and supported by the recommendation of the governor of said Territory or the Secretary of the Interior, issue an injunction restraining the further operation of such mine until such requirements are complied with, and in order to obtain such iujunction no bond shall be required.

SEC. 17. That wherever the terms "owner" or "manager" is used in this act, the same shall include lessees or other persons controlling the operation of any mine. And in case of the violation of this act by any corporation, the managing officers and superintendents, and other managing agents of such corporation, shall be personally liable and shall be punished as provided in the act for owners and managers.

SEC. 18. That the mine inspectors provided for in this act shall each receive a salary of two thousand dollars per annum and their actual traveling expenses when engaged in their duties.

SEC. 19. That whenever any organized Territory shall make or has made provision by law for the safe operation of mines within such Territory, and the governor of such Territory shall certify said fact with a copy of the said law to the Secretary of the Interior, then and thereafter the provisions of this act shall no longer be enforced in such organized Territory, but in lieu thereof the statute of such Territory shall be operative in lieu of this act.

Approved March 3, 1891.

INSTRUCTIONS AND RULES.

[Under which the Cerrillos Coal Railroad Company mines are to be governed, and all fire bosses will observe the same.]

First. Do not remain off of duty without giving the foreman due notice, so that he can put a man in your place.

Second. On beginning your shift's work your regular daily route will be: Commencing at mouth of slope, travel to face, and return from lower entry in slope to the upper entry in same, making regular travel in all air courses, and examine all places, including abandoned as well as working places in each entry, with Davy safety lamps or such other improved lamps as may be in use at the time.

Third. If you find the brattice or canvas shot down or damaged, repair it at once, so as to conduct the air to the face of the workings as soon as possible, and report in every instance where canvas is shot down to the foreman.

Fourth. Report in writing all places where gas is found, also verbally, to foreman.

Fifth. If air courses are obstructed in any way by water or rock, etc., report same in writing and verbally to foreman, that he may remedy it at once.

Sixth. Where roof of air course is bad and looks dangerous and should be timbered or taken down, report same daily in writing and verbally to foreman.

Seventh. Do not allow any man to go into his place with a naked light where standing gas is found or being generated freely. Give him a locked safety lamp and instruct him to use it instead of a naked light until further advised by you. Any person that you find disobeying this rule report same to foreman at once, and the miner so disobeying will be discharged from the employment of the company.

Eighth. If you should find a large quantity of gas at any time in the mine between shifts, report same at once to foreman, and do not allow the men to go forward on the slope farther down than lamp house, and the foreman will know from your report how to instruct further.

Ninth. Quantities of gas found in places on account of brattice or canvas shot down should always be removed by the fire boss, and not allow the men to enter the place under any consideration until the gas is removed.

Tenth. Instruct men who are working with safety lamps to brush all gas from their places before firing shots.

Eleventh. Any fire found in the mine from shot firing or otherwise must be put out promptly, and call for assistance from any point if you are unable to extinguish it yourself.

Twelfth. Examine and clean all safety lamps thoroughly after each shift's use, and do not allow any defective lamps to be taken from the lamp house.

Thirteenth. Any lamps that are damaged by any person using them, or if they fail to return them after the expiration of each shift, report same to foreman, and damages will be charged against them.

Fourteenth. Report all places to foreman where you think there is not a sufficient flow of air traveling to prevent the accumulation of gases.

Fifteenth. Travel the main return-air ways daily without fail, and see that same are in perfect condition.

Sixteenth. Put the danger mark (X X) at the entrance of all places that contain any standing gas.

RULES GOVERNING THE CERRILLOS COAL RAILROAD COMPANY MINE FANS.

First. The fireman will attend to the fans when the engineers are off duty.

Second. The engineer when on duty will have full charge of the fans and see that they are properly attended to.

Third. On commencing the shift's work visit the fans and see whether they are in good order or not.

Fourth. If you find any of the fans in bad order, notify the master mechanic at once.

Fifth. Do not stop the fan for any slight adjustment while men are in the mine.

Sixth. If either fan should get out of order so that it is necessary to stop it, close the trap door near the fan immediately after stopping the fan, and open trap door immediately when the fan is started up again.

Seventh. Notify the foreman before you stop either or both of the fans.

Eighth. Do not stop both fans at one time while men are in the mine unless you see that they will be totally destroyed by continuing to run them, and not then until you notify the foreman to get the men out of the mine.

Ninth. If a sudden breakdown should take place or you should find one of the fans stopped, notify the foreman at once, then close the trap door, and notify the master mechanic.

Tenth. In case of breakdown occurring to either of the fans, and the master mechanic is not close at hand, the engineer and fireman must do everything within their power to get the fan in operation again as soon as possible.

Eleventh. Fans are to be kept speeded as per verbal instructions given to you from time to time by the master mechanic or superintendent.

Twelfth. Visit the fan every hour and notice if all the working parts are in good order.

Thirteenth. Notice the speed of the fan every thirty minutes.

Fourteenth. If anything occurs to the boilers or steam-pipe connections, or if a sufficient quantity of steam can not be kept up for both fans and hoisting plant, stop hoisting till such time as you can recover and maintain the usual pressure of steam.

Prices paid for labor, mining coal, etc., by the Crescent Coal Company, Gallup, N. Mex.

Mining coal, per ton of 2,000 pounds, screened	$0.70
Driving entry, per yard	2.00
Room turning	4.00
Crosscut, per yard	1.50
Timbers, per set	.50
Company men, underground, per day	3.00
Boys, attending to doors, per day	1.00

Engineers, per month	$80.00
Boiler man, per day	2.25
Tipple men, per day	3.00
Blacksmiths, per day	3.00
Blacksmiths' helpers, per day	2.50
Carpenters, per day	3.00

Prices of powder and supplies for miners, Crescent Coal Company.

Powder, per keg	$4.00
Lamp oil, per gallon	1.25
Lamp cotton, per ball	.05
Squibs, per box	.25

Prices paid for labor, mining coal, etc., by the Cerrillos Coal Railroad Company, at Madrid, N. Mex.

Mining coal per ton of 2,400 pounds mine run:	
Cook & White	$0.70
Lucas, screened	.90
Driving main entry, per yard	3.00
Driving back entry, per yard	1.75
Driving crosscuts, per yard	1.50
Driving main slope when in natural coal, per yard	6.00
Driving main slope when in faults or solid rock, per yard	9.00
Driving raised planes, per yard	1.75
Turning rooms off entry and driving room 30 feet	8.00
Setting rough 7-foot timbers	1.00
Setting timbers over 7 feet in length	2.00
Setting 7-foot props	.07
Wages paid:	
Pit bosses, per day	3.00
Fire bosses, per day	3.00
Tracklayers, per day	2.75
Company timbermen, per day	2.75
General company men, per day	2.60
Single mule drivers, per day	2.60
Team drivers, per day	2.75
Rope riders, per day	3.00
Car couplers, per day	2.75
Assistants to company men, per day	2.00

Prices of powder and supplies for miners of the Cerrillos Coal Railroad Company.

Powder, per keg	$2.60
Lamp oil, per gallon	.85
Lamp cotton, per ball	.05
Squibs, per box	.25

Miner's Annual Contract.

GALLUP, NEW MEXICO.

This agreement, made this ——— day of ———, A. D. 189—, between the Crescent Coal Company, of the first part, and ——— ———, of the second part

Witnesseth, that said party of the second part has agreed, and by these presents does hereby agree, to enter the employment of the said party of the first part as a ———, to commence on the —— day of ———, A. D. 189—, and continue thereon until ———, 189—, and to abide by and to adhere to and observe the rules and regulations set out and printed on the back hereof, numbered one to twenty-five, inclusive, and which are hereby made a part of this contract, to the like extent as if herein written, and in addition to abide by and observe all other rules and regulations as may be adopted from time to time by said coal company, party of the first part, by and with the consent of the party of the second part, for the purpose of regulation of mining and other employment in and about the coal mines and property of said coal company, party of the first part.

The said party of the second part further agrees to keep his room or working place in good order and repair, well secured and propped; and, also, that if the said party of the second part should at any time deem his room unsafe and insecure by reason of a neglect or failure to deliver props, he shall at once cease work in said room or working place, and shall not resume work therein until first suitable props have been delivered and he has made his room secure; and, also, that he will not be absent from his employment hereunder without leave, except in case of sickness or other unavoidable contingency that will prevent him from work.

The party of the first part agrees to furnish at the mouth of the room the requisite material, rails, props, and supplies to keep said room in good working order, after party of the second part has selected the same and placed his number thereon.

The party of the first part agrees to pay the party of the second part for each ton of coal mined by him and delivered on the cars, as follows, less all deductions, set-offs, and counter claims due at date of payment: ——— cents per ton from ———, 189—, to ———, 189—, all coal to be free from rock, bony, or other avoidable impurities.

The party of the first part agrees to pay the party of the second part ——— dollars for each day, month, the party of the second part may be employed by the party of the first part, less all deductions, set-offs, and counter claims due at date of payment, from ———, 189—, to ———, 189—.

All coal to be weighed before screening, 2,400 pounds, or such other amount run of mine as will make 2,000 pounds of screened coal over present screens.

Said first party hereby reserves the right and privilege of closing its mines at any time, or of reducing the number of employes by discharge of all or such of them, including said second party, as the superintendent, or the person having charge of the mines for the time being, may think proper. All payments hereunder to be made on regular pay day, and in compliance with the rules and regulations above named; and pay day is hereby fixed for and on the Saturday nearest the twenty-fifth day of each month, when and at which time all wages or moneys that may have been earned during and in the calendar month next prior to such pay day shall be paid, less all moneys owing said party of the first part on any account whatever.

It is hereby expressly agreed and understood by the party of the second part, that should he become a tenant of the party of the first part during the term of his engagement, then in case of the termination of this contract, either by his discharge from the employ of the said first party, or in any other way, the term of such tenancy shall at once cease and be determined without notice, and he will vacate the premises occupied by him, upon verbal notice of the agent or superintendent of the said first party, written notice to quit being hereby expressly waived, and on failure so to do will be deemed guilty of forcible detainer of such premises, and that he will not be entitled to demand or receive any part of the wages due him for labor performed (should the party of the first part so elect) until such premises are vacated and the keys thereof delivered at the office of said first party.

And the party of the second part further agrees that he will not stop work, leave the employment of said party of the first part, or join or become a party to, either directly or indirectly, any strike or combination for the purpose of obtaining, or the intent of which is to obtain from, or cause the company, party of first part, to pay their miners or other employees an advance of wages, or pay beyond what is specified in this or their contract, nor for any other cause whatever. Nor will he in any manner aid, abet, or countenance any such strike, combination, or scheme whatever, during the time specified in the first clause of this contract. And if the said party of the second part at any time shall violate any of the provisions of this contract in this regard, he shall thereby forfeit all claim for coal prior thereto mined or labor performed, and not paid for, and the said first party shall be fully released from all liabilities on account of this contract, for coal mined or labor performed by the said party of the second part.

For and in consideration of the foregoing agreements, the company, party of the first part, hereby covenants and agrees that it will not join any combination with other companies, or be a party, either directly or indirectly, for the purpose of reducing the rate of wages of the party of the second part below the sum specified in this contract. Nor will it in any manner aid, abet, or countenance any combination or scheme whatever, that has for its purpose any such object or design during the time specified in the first clause of this contract. And if the said party of the first part shall violate any of the provisions of this contract in this regard it will thereby forfeit a sum of money not to exceed fifty ($50) dollars as a penalty to the said party of the second part. Party of the second part, also, agrees to accept said sum of ($50) in full for any damage he may sustain by any violation of the provisions of this clause of this contract, and, on receipt of same, waives all further claims for damages against party of the first part.

In witness whereof the said parties have hereunto set their hands and seals this day and year first above mentioned.

CRESCENT COAL COMPANY.
By ——— ———,
Agent or Superintendent.

——— ———, *Witness.*
(Signed in duplicate.)

SHEEP HUSBANDRY.

SHEEP SANITARY BOARD OF NEW MEXICO,
July 10, 1900.

SIR: In compliance with your request we beg leave to submit report of the sheep sanitary board of New Mexico from June 30, 1899, to June 30, 1900.

Owing to the drought which prevailed throughout the Territory during the first half of the year 1899, referred to in our report to you of last June, the increase was comparatively small, in some sections as low as 25 per cent. It commenced raining, however, in June, and the lambs raised were in size and quality up to the average of other years.

In August, 1899, the board issued an order for general dipping, the dipping to be repeated before the 15th of December, and instructions were sent to our inspectors to see that this order was carefully complied with. All flocks were dipped in compliance with that order, and the sheep went into the winter in better condition than for a number of years past. The winter was exceedingly mild and the loss insignificant, and coming into the spring in such splendid condition the increase has been correspondingly large.

Drought prevailed in California, Arizona, and parts of Texas during the last year, and in consequence many sheep were brought into the Territory from those States, the number so brought in from June 30, 1899, to June 30, 1900, being 57,415.

The number of sheep leaving the Territory during the same period was 479,430.

The board has sent to all sheep growers in the Territory copies, in both English and Spanish, of the order promulgated by the Department of Agriculture as to the dipping of sheep and prescribing formulas. We have also been corresponding and cooperating with the Bureau of Animal Industry of the Department of Agriculture, and the Government now has an inspector in the Territory. During the months of September to January, both inclusive, there will be in New Mexico a corps of United States inspectors, charged with the duty of seeing that no sheep leave the Territory which are affected with scabies, and their assistance and cooperation will add to the efficiency of our work and greatly facilitate the enforcement of our orders and regulations. This will greatly increase the reputation of our lambs in the markets and materially assist in stamping out the disease of scabies.

On June 7 the board met and sent out a circular order, in English and Spanish, to all sheep growers, requiring all sheep affected with scabies to be dipped twice before August 1, 1900, under a penalty of a fine of one cent per head, and also notifying the growers of the intention of the General Government to station inspectors in this Territory.

During the year the board recovered and returned to their owners some 200 head of stray sheep and over 2,300 head of stolen sheep. It is proper, however, in connection with the large number stolen, to state that nearly all were stolen from one party, and that entirely through the efforts of our inspectors the fact that such sheep were so stolen was discovered, the thieves arrested, and the sheep returned to their proper owners. Owing to the fact that the board has a number of inspectors in each county, who constantly keep on watch for sheep thieves and stolen or strayed sheep, there has been but very little loss from such depredations.

The estimated number of sheep in the Territory taken from data in the office of board is 3,500,000.

The board has now about 45 range and shipping inspectors.

The outlook for the sheep business, the greatest of our Territorial industries, was never brighter than it is at the present time.

All of which is respectfully submitted.

SOLOMON LUNA, *President.*
HENRY F. LEE, *Secretary.*

Hon. M. A. OTERO,
Governor of New Mexico, Santa Fe, N. Mex.

IRRIGATED EGYPTIAN CORN IN PECOS VALLEY.

IMPORTANT ORDER.

ALBUQUERQUE, N. MEX., *August 19, 1899.*

To the Sheep Growers of the Territory of New Mexico:

You are hereby notified that all sheep which have not been dipped since the 1st of June, 1899, must be dipped between now and the 15th of September, using one of the formulas prescribed by the United States Government as set out in the regulations below, or with the lime and sulphur formula heretofore prescribed by this board in its rules and regulations. You are also notified that all sheep will be required to be dipped again after the 15th of October and before the 15th of December, 1899.

Any sheep owner who fails or neglects to comply with this order will be subject to a fine of 1 cent for each and every head not so dipped, and the respective inspectors for the various counties have been ordered to strictly enforce this order and to collect such fines, and to have all sheep not so dipped as above ordered dipped at owner's expense. And in event of any flock still showing scab after having been dipped twice, the dipping must be continued until the scab is entirely cured.

The circular from the United States Department is as follows:

UNITED STATES DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D. C., July 20, 1899.

Whereas the shipment of live stock affected with any contagious, infectious, or communicable disease from one State or Territory to another, or from any State into the District of Columbia, or from the District into any State, is prohibited by the act of Congress approved May 29, 1884; and,

Whereas the contagious disease of sheep known as scabies, or scab, exists in many parts of the United States, due notice of which was given in the Department order of June 18, 1897; and

Whereas some of the preparations in which diseased sheep have been dipped by owners and stock-yard companies with the object of destroying the contagion and making legal the shipment of said sheep in interstate trade have proved inefficient, and said sheep have disseminated the contagion notwithstanding such treatment; and

Whereas the damage and losses from scabies in sheep have been in some sections very heavy and discouraging to those engaged in the sheep industry:

It is ordered that from and after August 10, 1899, no sheep affected with scabies, and no sheep which have been in contact with others so affected, shall be allowed shipment from one State or Territory to another, or from any State into the District of Columbia, or from the District into any State, unless said sheep shall have first been dipped in a mixture approved by this Department.

The dips now approved are—

1. The tobacco and sulphur dip, made with sufficient extract of tobacco to give a mixture not containing less than five one-hundredths of 1 per cent of nicotine and 2 per cent flowers of sulphur.
2. The lime and sulphur dip, made with 8 pounds of unslacked lime and 24 pounds of flowers of sulphur to 100 gallons of water. The lime and sulphur should be boiled together for not less than two hours, and all sediment allowed to subside before the liquid is placed in the dipping vat.

The owner of the sheep is privileged to choose which one of the above-mentioned dips shall be used for his animals. The Department will instruct inspectors to enforce due care in dipping sheep, but it assumes no responsibility for loss or damage to such animals, and persons who wish to avoid any risks that may be incident to dipping at the stock yards should see that their sheep are free from disease before they are shipped to market.

J. H. BRIGHAM, *Acting Secretary.*

The above regulation has recently been sent out by the United States and is now being strictly enforced, and all persons who fail to dip their sheep in exact accordance with the above regulation and in every manner fully comply therewith make themselves liable to the United States. Sheep men are notified and warned that they must strictly comply with the above regulations or they will be liable for damages.

SHEEP.

That "the hoof of the sheep is golden" has been demonstrated conclusively in New Mexico. Not even Australia, renowned the world over as the sheep-grower's paradise, can surpass New Mexico in its advantages as an ideal sheep breeding and wool growing section. The master hand of nature lavishly supplied our Territory with everything requisite for the successful pursuit of the sheep and wool industry. Nature endowed her with a peerless climate, neither hot nor cold, yet overflowing with sunshine from January to December, producing an atmosphere pure, ozone laden, and invigorating.

Her grazing lands extend from the plains and mesas to the top of the mountains, 10,000 feet high and bountifully covered with nature's choicest nourishment—gramma grass—which retains to a surprising degree its succulence and nutrition, even when only cured by wind and weather where it grew, with no assistance from mankind.

New Mexico's natural adaptability to sheep raising and wool growing was recognized by the Spaniards when they settled in this section about three hundred years ago, and they introduced large numbers of Merino sheep, which soon became the principal support of the people, furnishing them with food and raiment. Since that time this industry has a prominent position in the Territory, and it is to-day, as it has been for many years past, the most important and profitable in New Mexico. At this time there are owned in the Territory of New Mexico over 4,000,000 head of sheep, including the lambs grown this year, and, with the exception of one State possessing many similar advantages, our Territory towers above all other States and Territories in the number of sheep owned. The original stock was of the Spanish Merino type of sheep, and from lack of fine-bred rams to keep up and improve the strain they gradually deteriorated in character until they became a class unto themselves, displaying more of the characteristics of wild than of domestic animals. This trait developed in these sheep an ability to hunt for their food and enable them to subsist upon the scanty herbage and to live without water for many days, whenever conditions demanded or necessitated such modes of living. To-day, though improved by the best blooded stock to be found, they still possess these desirable characteristics.

The ewes make splendid mothers, caring for their lambs in a manner unequaled by any other breed of sheep and fearlessly defending them against attack by carnivorous wild animals. Their fecundity is also remarkable, and there is always a high percentage of lambs born, running up, in some flocks, over 100 per cent. Possessing such qualities, the increase and growth of the flocks is very rapid.

With their inherited and acquired knowledge of the sheep business, it would be difficult to find in any other section of the country a class of growers who can excel the New Mexican sheep men in the intelligent and economical management of their herds. In the improvement of their flocks they have experimented with different breeds, and the results have convinced our best sheep men that, for the conditions prevailing in New Mexico, the American Merino (the Delaine or Rambouillet types) is superior to all other breeds tried, and for the purpose of raising the standard of their sheep they have imported many fine-bred rams from Vermont, Pennsylvania, Ohio, and Michigan, for some of which as high as $100 per head was paid. The fine types are peculiarly suited to New Mexico, not simply because they are wool and mutton sheep, but for the reason that sheep in our Territory are grazed upon open ranges, and it is therefore essential that the sheep should possess the quality of herding together, and this is a leading trait of the Merino. Some of the long-wooled mutton breeds have been tried; but as these sheep will not stay "bunched" while feeding, it is very difficult to herd on the open ranges, and their decided tendency to wander off singly demands unceasing vigilance as well as hard and tiresome work on the part of the herders to hold them together, while the danger of loss from this cause is always serious, and these sheep are not well suited, therefore, for open-range grazing.

The Rambouillets, however, being of pure Merino descent, have inherited the flocking qualities of their ancestors, and they are a desirable class for range work. They are free from wrinkles, the wool produced is the finest quality, and they make excellent sheep for mutton purposes. We do not know whether it is due to the climate, to the gramma grass, or to the breeding, yet the fact remains that the mutton from New Mexico sheep possesses a sweetness, tenderness, and delicacy of flavor that place them easily in the front rank as choice mutton sheep. These qualities are so well known that "feeders" prefer them to any others, and the demand for them for feeding pens is so great that the growers are only partially able to supply it. Nearly a million head of sheep are annually taken to Colorado, Nebraska, Kansas, Missouri, and Illinois to be fattened for market.

Fort Collins, Colo., received large numbers of them, and the high price the feeders obtain for their New Mexico sheep demonstrates their superiority as mutton producers. The sheep make splendid feeders, as they will eagerly and greedily feed upon alfalfa, oats, corn, wheat screenings, etc., and take on weight very rapidly. Their faculty for adapting themselves to existing conditions makes them very desirable animals for feeders, as they are as much at home in the pens as they are upon the ranges. Sheep are also being fattened around Eddy, N. Mex., upon the sugar-beet pulp, and the sugar factory there is now able to advantageously dispose of what was formerly a waste product. Results from pulp feeding have been very satisfactory, particularly in the case of old ewes. The pulp furnishes them with an abundant supply of rich milk, and they are thus enabled to raise strong, well-developed lambs.

No business offers more profitable returns than does the sheep-raising and wool-growing business of New Mexico at the present time. The cost of running the sheep for a year is about 30 cents per head, which covers the expenses of herding, lambing, shearing, dipping, taxes, etc. The cost of shearing amounts to 2½ to 4 cents per head, according to the class of sheep shorn. The flocks are usually run in bands of 3,000 to 5,000. The people of New Mexico are unsurpassed in the management of sheep herds. It is no unusual thing for them to take sheep on shares, agreeing to return double the number of young and healthy ewes at the end of five years, with a considerable amount of wool annually; and often, after the five years, the party, on repaying, has double or treble the original number left for himself. The flocks require three men, or two men and a boy, and two or three dogs, and, when the same man has three or more flocks, another man of experience as overseer. Each flock also has a donkey and camp equipage, which, with the rations, is carried on the donkey. The sheep are grazed from place to place within the range. The men and dogs constantly remain with the sheep during the whole year.

The following statement will briefly show about what can be done in the sheep and wool industry in the Territory of New Mexico. This is the way it works:

4,000 ewes, at $3 per head	$12,000	
Expenses for one year, say 50 cents per head	2,000	
Total cost		$14,00

At the end of one year you have:

3,800 ewes (5 per cent loss allowed), at $3	$11,400	
21,000 pounds of wool, at 12 cents	2,520	
3,100 lambs, at $2	6,200	
		20,120
Profit		6,120

Fifty per cent on the original outlay is a handsome return from any enterprise, and we believe we do not err when we reiterate that the people engaged in sheep husbandry in New Mexico are following the most profitable business in the West to-day, and as long as a protective tariff guards their interests the prospects and outlook for the future are certainly very bright for the sheep men, and the prosperity of the Territory is in a very large measure commensurate with the success enjoyed by those who are devoting their capital, brains, and energies to this important industry.

WOOL.

The wool clip of the Territory will amount to fully 18,000,000 pounds this year. A few years ago the average weight per fleece was very low, but now, owing to improved breeding, it will amount to a little over 5 pounds per head. The wool grown in New Mexico is of a diversified character, scaling from the finest Delaine-Merino to the coarsest carpet. The improvement in the grade of the wools has been coincident with the improvement in the sheep, and the growers are still exerting themselves in the laudable ambition of bringing their flocks and wool up to a still higher standard of quality. Many years are consumed in breeding the coarse-wooled stock up to the desired Merino plane, and so to-day, while clips are shorn that will compare favorably with any in the United States, the majority of them are not uniform in grade, but will contain fleeces producing sorts running from fine to carpet wool. The lambs of each succeeding year produce a finer grade of wool, and in time, if the growers continue to use fine Merino rams, the wool clip of New Mexico will be composed of fleeces uniform in grade and of choice character.

There is an ever-increasing scarcity of fine wool in the world, due to the crossing of the fine-wooled flocks with the large-framed, coarse, long-wooled breeds. The tendency to breed exclusively for a large carcass has amounted almost to a craze all over the globe, from which the New Mexican growers have been comparatively free. They have again displayed their intelligence by directing their efforts solely to the production of fine-wooled mutton sheep, and the certain advance of fine wools to a high point will amply reward them for their foresight and labors.

The following tables, furnished by one of the large wool-scouring plants situated at Las Vegas, indicate the diversity in the wool clips grown in the Territory:

	Per cent.
A clip of 40,000 pounds of grease wool yielded:	
Scoured fine wool	65
Scoured fine medium	35
A clip of 90,000 grease pounds yielded:	
Scoured fine and fine medium	97
Quarter-blood	2
Blanket	1
A clip of 77,000 grease pounds yielded:	
Scoured fine and fine medium	90
Quarter-blood	9
Blanket	1
A clip of 31,000 grease pounds yielded:	
Scoured fine medium	2
Three-eighths	59
Quarter-blood	17
Blanket	18
Carpet	4
A clip of 20,000 grease pounds yielded:	
Scoured three-eighths	43
Quarter-blood	31
Blanket	16
Carpet	10

There are many clips that will show a much greater percentage of the low sorts (blanket and carpet) than is indicated in the tables quoted above.

The production of such a vast quantity of wool has brought within our borders another important industry—the business of scouring wool as well as of sorting it and otherwise preparing it for the manufacturers' use. Three large plants have been erected at Las Vegas. There is also one located at Albuquerque. There is in addition to these a scouring plant at Trinidad, Colo., across the New Mexican line, which handles large quantities of wool grown in northern and northeastern New Mexico. The town of Eddy has also a large plant recently put into operation.

These scouring mills have been the prominent factor in securing for the growers full prices for their clips. The benefits they confer upon the sheep men are numerous. Their presence and anxiety to secure wool has developed a competition among buyers that has reacted to the growers' benefit. The scouring of wool at home results in a big saving in freight charges, as all the grease and sand carried by the wool is eliminated, and transportation charges are only paid on clean wool. They are a school for the growers, as they teach them the shrinkage of the wool and the percentage of the various sorts taken from it; and, as all wool is bought and sold on a scoured basis, it is very necessary that they should possess this information, as it enables them to dispose of their products intelligently and to good advantage. If wool is consigned to an Eastern commission house to be sold, the charges are less for handling scoured wool than for grease wool, the growers have more money to spend at home, and their support of the scouring mills keeps employed in New Mexico much capital and many hands. The benefits of scouring mills to a community are fully illustrated in the case of Las Vegas, which is to-day the best wool market in the Southwest, and wool is shipped to that point from the most distant parts of the Territory, the growers being attracted there by its excellent outlet for wool. If the grower sells his wool to an Eastern buyer in the grease, he has to pay the freight as well as the charge for scouring the wool, as he well knows, and if he can save the money paid for hauling the grease and dirt in his wool, it is certainly to his interest to do so. It is also better for the Territory to have this work done here, as it encourages an important industry here and adds to the wealth of New Mexico. That the conversion of the wool just as it comes from the sheep's back into the condition required by the manufacturers has been remunerative to the growers is demonstrated by the following letters which were received, with numerous others of similar import, by one of the leading scouring mills at Las Vegas, N. Mex.:

—— ——:

In reply to your letter of the 10th instant, I have to say that I want you to scour my wool, as you have done for many years.

I have learned by experience that the reputation of your company in the wool market of the East is such that wool sorted and scoured by it sells for the highest market price; and in regard to my wool, when you scour it, and I see the market quotations for scoured wools, I know exactly what it is worth, and I believe the owners of fine wool can realize more by scouring than selling in the grease. For instance, two years ago, when you scoured it, I realized, after all expenses had been paid, $1,668.48 over the highest price I was offered for it in the grease.

I often hear it asserted that in New Mexico and Arizona we can not raise such wool as is produced in Montana and Northern States, and it may be true; but, nevertheless, I have received for every clip you have scoured the past six years the same price, and I think I owe something to your company for the thorough manner it was sorted, scoured, and put up, and I am going to stay with you.

Yours, truly,

J. G. CLANCEY.

P. S.—I hope to have over 100,000 pounds this coming clip.

—— ——:

We are very well satisfied with the manner in which you handled our clip last year and the price you got for us. It is our intention to place this spring's clip, which will be in the neighborhood of 200,000 pounds, in your hands again, as we believe all fine wools should be handled through a scouring-mill, as there is a big saving in freight and in the commission charged for selling the wool. We are convinced that we can get more money from our clip in this manner than if it is handled or disposed of in any other way.

Yours, truly,

MCINTOSH & MCGILLIVRAY.

The sheep business of New Mexico has also resulted in the establishment of another enterprise at home, viz, that of wool pulling and tanning. There are located at Las Vegas two wool-pulling plants, one of which is also engaged in the tanning of leather. The processes through which a sheep pelt goes from the time it is taken off the carcass until it is converted into leather are many and interesting. When the pelts are received by the puller they are soaked in tanks filled with clear, soft water. When the skin is thoroughly softened, the water is drained off, usually in hydro-extractors. If what is known as the sweating process is used, the pelts are then suspended from the tenterhooks in closed rooms called the sweat houses. Steam is introduced, and the chemical action produced by the heat upon the skin causes the wool to be easily removed from the skin after having been sweated for about forty-eight hours. The use of depilatories is largely supplanting the sweating method. In this case the flesh side of the pelt is painted with a solution of the depilatory. The pelt is folded and laid away for from five to twelve hours, according to the season of the year and the strength of solution, after which the wool can be pulled from the skin with great ease, the depilatory having destroyed or eaten the roots of the wool fibers. As the pullers remove the wool they sort it into different classes belonging to pulled wool, which are technically known as extras, fine super, A super, B super, and C super. The pelt from which the wool has been taken is now termed the "slat," and it is then put through the process of liming, beaming, bating, or drenching. At this stage, if the puller is also a tanner, the slat goes to the tanning department, whence it finally emerges as leather. There are about twenty different processes for tanning slats, the four principal ones being the chrome, the oil, the bark, and the alum. If the puller does not desire to tan the slats, he proceeds to pickle them, in which state they can be kept for a long period, or they may be sold to those who tan the slats only and do not engage in the preliminary work of pulling. The work of pickling is performed in order to preserve the slats in good condition for tanning when they are not tanned immediately after the bating process.

The location of these plants within the Territory supplies the growers with a splendid home market, just as the wool-scouring mills furnish him with an unsurpassed outlet for his wool clip. New Mexico pelts have an enviable reputation for their leather-making qualities. Eastern tanners prefer them to all others on account of their fineness of grain and toughness, and they are largely used in the production of imitation morocco and other leathers, as well as for glove stock, for which they are eminently suited. If the butchers and herders will exercise proper care in removing the pelt from the carcass and curing it afterwards, they can obtain fancy prices for them. Pullers and tanners have complained at times that excellent skins have been ruined for leather purposes by reason of careless skinning and handling in the primal stages, an objection that should and can be easily remedied by the exercise of intelligence and care on the part of those who skin the animals and prepare the pelts for shipment to the pullers.

GREAT MONEY EASILY MADE IN CATTLE AND SHEEP BUSINESS.

A number of lines of business in which large gains are now realized have been mentioned in different parts of this report. And what many are now doing many more could do, for one beauty about New Mexico is that an investment here is not simply one nail driving out another. Every department of industry and enterprise has abundant room for many additions, the newcomers doing as well as the old, and the old suffering no competition from the new. Were the stock investments of New Mexico doubled in value by the addition of new ranges and new animals, the old interests would not be damaged a particle, since the return on investment in this industry is determined by the condition throughout the nation. So with the production of wool and hides and pelts. For those having the means and somewhat of experience, the cattle or sheep business offers a field of almost limitless opportunity and vast profit, either in the purchase of present ranges or the development of others, should breeding be proposed; or in the purchase of lands and development of new ranches, should feeding and fattening be contemplated.

These enterprises require, of course, a considerable outlay of money in the purchases of stock and ranches, though the ranges are practically free, the location or development of water placing the surrounding unwatered lands at the use of the locator. But similar stock industries can not be entered upon elsewhere and to the same extent with less money, nor will the returns elsewhere be so satisfactory. Because of winter mildness, maintenance is less costly, and because of climatic excellence losses are fewer and increase is at a much larger ratio. The stockbreeders' Elysian fields lie in New Mexico.

Hon. MIGUEL A. OTERO,
Governor, Santa Fe, N. M.

DEAR SIR: I have the honor to report that the material results accruing to the cattle interests of New Mexico for the year ending June 30, 1900, have been the best experienced for at least a decade. The losses in range stock consequent to the extraordinarily severe winter of 1898 and 1899 were confined entirely to the poor and weak old cows that were unable to go far away from the watering places in search of pasture, and were always the first to be seen when stock was shown to intending purchasers, and invariably made a bad impression as to the quality of the bulk of the herd, so that their removal by the elements has proved to be very much in the nature of a blessing in disguise, so much more satisfactory do the herds appear without them. And further, if there were any germs of infectious disease lurking on the range, they were likewise destroyed. Not a single case of anything of the sort has been reported to this office since my last report, and the health of the cattle was never better.

From July 1 the season of 1899 was favorable to the stock interests, water everywhere, and grass well cured before frost; stock of all kinds were well prepared to go through the balance of the year without suffering. This followed by an unusually mild winter no appreciable loss was experienced. Throughout the greater part of the Territory the summer rains set in a month earlier than usual and have kept up until now, making the present one of the most favorable seasons for the stock interests ever known.

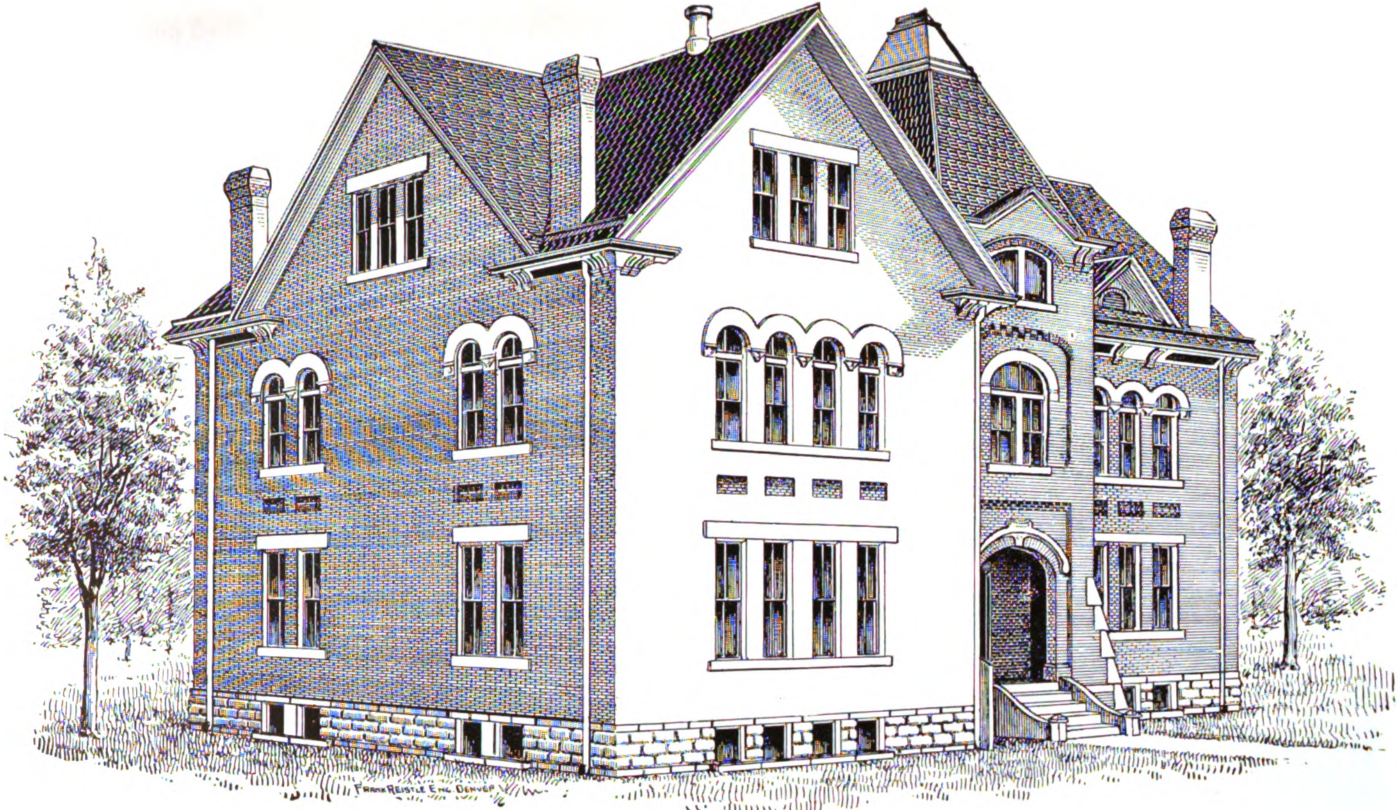
Inspectors report that the increase in the various sections of the Territory will run from 60 to 90 per cent of the breeding cattle, and that owing to the abundance and freshness of the pasture all will be saved and well grown, and that the improvement of grade over that of all previous years is especially noticeable. That the active demand for a well-bred yearling at $20 and the slow sale of a scrub at any price has been an object lesson to the nonprogressive cattleman that can not be disregarded if he continues in the business, and the production of a class of cattle of as high a grade as the vicissitudes of the range will with safety permit is now fully under way. That, in introducing new blood for the improvment in grade, the tendency is strongly to the Herefords, though many of our foremost cattlemen well qualified to judge, claim the first cross on our native stock should be on the Durham, to give shape, size, and bone, and the Herefords put in later to impress their well-known rustling qualities.

The demand for all classes of cattle has been strong. There have been sold and delivered since January 1, 1900, 86,470 head of cattle mostly one and two year old steers at from $15 to $20 per head for ones and $18 to $27 for twos, according to quality and accessibility. Threes and up are very scarce and can not be found in any great number in single hands.

There has also been a good demand for heifers and stock cattle, but in these classes not much trading has been done, their owners no longer being in financial straits in view of the outlook, preferring to hold them for their increase and the growth they will surely take on owing to the abundance and quality of the pasture at hand.

At this time of the year the question of the Kansas corn crop is a problem of great interest to the New Mexico stockman, for on it depends to a great extent the demand for the products of the range for the balance of the calendar year, and until that crop is assured, no reliable estimate can be made of the numbers that may be required for feeding to a finish. There are plenty of steers yet in the Territory that will be available for this purpose if the present indications for an immense corn crop in that State are realized.

Outside of the land grants the greater portion of the range in this Territory is on the public domain. The question of leasing these lands in large bodies is now being agitated mostly by the people living in States that have none within their borders. There is a great deal to be said on both sides of the question, but the sentiment that men are better entitled to the privilege of making homes for themselves and families wherever the conditions will permit it than that these lands shall be monopolized for the exclusive breeding of stock seems to prevail in this Territory.



Normal School, Silver City, N. Mex.

During the year ending June 30, 1900, 214,053 head, mostly steer cattle, were sold and removed from the Territory, amounting at current values to upwards of $4,000,000, and during the same period there were brought into the Territory to remain 13,095 head, of which 5,391 were from the Republic of Mexico.

All of which is respectfully submitted.

J. A. La Rue,
Secretary, Cattle Sanitary Board.

July 7, 1900.

FOREST RESERVES.

The forest reserves of New Mexico, two in number, the Pecos River and the Gila reserves, cover an area of 160 townships, or 3,701,040 acres. The Pecos River Reserve of 431,040 acres is situated north of the central part of New Mexico, partly in Santa Fe, San Miguel, and Mora counties. It was created to protect the head waters of the Pecos. Several ranges of mountains, running from north to south, and from 8,000 to 13,000 feet high, cover the reserve. The Gila Reserve, 3,270,000 acres, is located in southwestern New Mexico, in Grant and Socorro counties. It protects the head waters of the Gila River and its tributaries. The Mogollon, the San Francisco, the Tularosa, the Black, the Little, and the Diablo mountains are the most important mountain ranges on that reserve. The establishment of a third reserve in the Capitan and White mountains in Lincoln County, in southern New Mexico, is spoken of by departmental officials, and is intended to protect the head waters of the Bonito, Eagle Creek, Rindoso, and Rio Hondo. The area of this proposed reserve is to be 250,000 acres. There is also talk of establishing a reserve in the Zuñi Mountains in western Valencia County, in the western part of the Territory.

The 5,782 square miles covered by forest reserves in New Mexico is a magnificent domain. It is as large as Rhode Island, Delaware, and one-half of Connecticut taken together, an area that supports over 1,000,000 inhabitants, or fully five times the present population of this Territory. It is a domain which in lumber alone is worth great wealth. But on the reserves are also some of the largest and richest mineral deposits in New Mexico. Some of the best grazing lands are found on their mesas and hillsides. Good agricultural lands exist along the river bottoms, in the cañons, and in the valleys between the ranges. The ground cleared of forest growth makes very fertile farm land, as has been demonstrated in the Sacramento Mountains. There is an abundance of running water on these reserves, a higher average of rainfall than elsewhere in the Territory, and many natural reservoir sites which might have been utilized to reclaim thousands of acres of fertile but arid land.

The creation of forest reserves retarded and in some respects ended all prospects of utilizing for settlement some of the most desirable parts of all New Mexico. The lumber industry on the land included in the forest reserves, of course, has been destroyed.

The growth of agriculture and horticulture is out of question, for all land within the reserves has been withdrawn from settlement and much of the agricultural land already settled is being relinquished to the Government. The storing and utilization for irrigation purposes of the flood waters on the reserves at present can not be thought of. Mineral exploitation has been retarded owing to restrictions as to the use of timber, because food and other supplies had to be hauled a long distance and because railroads are not likely to be built, for the present at least, over public land that has been withdrawn from homestead entry. There remains only the stock industry, dependent upon good grazing, that might continue to make its home upon the forest reserves, but under present restrictions it also is doomed to be wiped out within a few years.

It will thus be seen that New Mexico lost heavily in prospective growth and wealth through the establishment of forest reserves. Nevertheless the people of the Territory acknowledge the great good (some of which, however, is still problematical) desired to be accomplished by forest reserves. It is readily seen that forests afford some protection to the head waters of streams. A continuous supply of water is furnished by the trees retaining the snow in the mountains until a late period of the summer season. The trees shade the banks of the river from the sun and prevent the rapid evaporation of the water. The withdrawal of the land from settlement prevents the diversion of the head waters of streams for irrigation purposes. The snow lying on the ground late in spring on forest reserves acts as a cover for the young growing shrubs and small growth of timber. The forest growth affords protection against the chilly blasts of frigid winds that sweep across the prairie. It also gives shelter to live stock and herders in time of storm. Last, and certainly not least, the forest reserves are ideal resorts in summer and excellent hunting and fishing ground at all times.

But all these aims can be attained and these benefits secured without burdensome, meddlesome, and unnecessary restrictions or total prohibition of grazing upon the reserves. The damage caused by the grazing of sheep and goats in wooded regions has been greatly exaggerated, and in some respects is imaginary. It certainly is small when compared with the benefit it confers upon the reserves and the material profit that it means to their owners and indirectly, also, to the Territory. In the first place the prohibition of the grazing of sheep and goats upon the reserves works untold hardship and is bringing material ruin to many settlers who were upon the land before it was set apart as forest-reserve ground. For many generations back their ancestors lived upon the same ground, and their herds and flocks are their sole wealth, accumulated through several centuries of hardships, danger, and exposure. Their capital and means of livelihood is the range round about them. They settled in those sections because they believed, and had cause to believe, that they would remain unmolested in their grazing privileges. Now, after such long undisputed possession, the United States Government steps in and evicts these settlers in the most heartless manner. The range beyond them outside of the forest reserve has been taken up by others or is valueless on account of drought or other untoward circumstances. The homes they have built and the wells they have drilled are worthless to them, for they must now sell their flocks and herds, if they can find a buyer, or they must allow them to perish, and then they themselves must leave the homes of their fathers to find means for making a livelihood elsewhere. The forests have existed for decades and so have the flocks and herds, and not until the present day have they been thought to interfere with each other.

The sheep and goats have been the protectors of the forest. By nibbling short the grass and undergrowth they have created barriers against forest fires. Trees on the reserves, with some notable exceptions, are not at all dense in their growth, and forest fires could not spread unless by the grass and undergrowth. In addition, the presence of herders on the reserves aids in the quick detection and extinguishing of any incipient forest fires. The herders know that it is to their interest to assist in preserving the forest growth and extinguishing fires. They can be of great aid in that respect to the force of rangers, which, even if it were ten times its present number, would still be inadequate for reserves so vast that they cover 6,000 square miles. It is simply a matter of getting as much material benefit out of the forest reserves as possible without interfering with the purpose for which they were created.

So, while the people of New Mexico acquiesce willingly in the losses the Territory necessarily sustains by withdrawing such large areas of good land from homestead or desert-land entry and from purchase by settlers, they ask that the restrictions hedging in these reserves be not made unnecessarily severe; that the force of forest rangers be increased so that each ranger can give his attention solely to a limited area; that streams be restocked with fish and that game be protected; that the land not strictly forest land be again thrown open to entry, and that cattle, sheep, and goats be allowed to graze upon the forest lands, if necessary in limited number and within necessary regulations, but free of charge and without burdensome restrictions.

Office of Superintendent of Forestry,
Santa Fe, N. Mex., May 23, 1900.

My Dear Sir: I am in receipt of your communication of May 7, addressed to the superintendent of forest reserves, New Mexico, calling for a complete report of existing conditions on the two forest reservations in the Territory, viz, the Gila and Pecos. I have waited until now in order that this report might be made by the superintendent proper, Hon. W. H. Buntain, who has been away from his office since March 20 on a leave of absence, and who is thoroughly conversant with the work; but I am officially notified that Mr. Buntain has resigned, and that I am to remain in charge as acting superintendent until his successor is appointed. I therefore feel called upon to take up the matter of the report called for by you and give you such information as I have in my possession, which of course will be limited, for the reason that I have had charge of the office only since April 30, and the data from which my report is made is gathered from reports of forest supervisors on these reservations, and I shall attempt only general summary of the conditions.

First, as to the Gila River Reserve. The timber is in good and healthy condition, and the undergrowth, small pine, over the entire reserve is growing nicely, due in a large measure to the excessive precipitation which for the month of April, as reported by M. M. Mulhall, was 0.85 of an inch.

No fires of any consequence have been reported on this reserve since January, and specific instructions were issued in this office to-day, May 23, to Supervisors Langenberg and McClure, to so systematize their force of rangers as to preclude the possibility of any large fires this summer, which reorganization, it is hoped, will prove effective and accomplish the desired end.

The order excluding sheep and goats from this reservation was temporarily suspended by telegram from Honorable Commissioner-General of the Land Office, dated January 10, pending an investigation which the superintendent of forestry was directed to make at once. Because of ill health and subsequent resignation of Superintendent Buntain, this investigation and report has not been made, and will doubtless occupy the attention of the new superintendent at an early date. Meanwhile sheep and goats are grazing on this reservation.

This office is also in receipt of numerous petitions from settlers on the Gila River Reserve, for the elimination of townships 13, 14, and 15 south, ranges 19, 20, and 21 west, setting up the fact that the country embraced in this territory is a high, rolling mesa, cut up by low mountains and long draws and ravines, and contains no timber growth, except scattering scrub oaks and occasional small juniper and pine, and is not adapted to forest growth, and is in no sense a forest, or of such a nature as to become forest land, but is purely and solely high, dry, open, broken mesa land, adapted only to grazing purposes.

The honorable Commissioner, in letter of date April 3, has directed superintendent of forestry to go upon and personally examine and make a detailed report upon the requested elimination of said land, and I shall call the attention of the new superintendent to this order immediately upon his arrival.

In the matter of the Pecos River Forest Reserve, I would most respectfully report the forest, like that of the Gila, in splendid condition, and the undergrowth of small pine and all manner of vegetation in excellent condition for holding moisture, due in part to the fact that last year sheep and goats were excluded from the reservation, and the further fact that during the month of April the precipitation was the largest known on this reservation since the records have been kept by the local weather bureau at Santa Fe. The amount of snow that remained on the ground was the largest on record, total precipitation for the month of April being 2.10 inches.

No fires have occurred on the Pecos Reserve during the year of any consequence. The only timber depredations reported since 1st of March have been committed along the eastern border of the reservation, where the line of the reserve is not well marked. The trespasses have been small, and were reported to the Federal grand jury at Las Vegas last week by Forest Ranger Charles T. McGlone, who has charge of that part of the reserve.

By reason of an order which issued from the General Land Office April 17, 1900, all persons desiring to graze cattle and horses upon the reservations of New Mexico will be required to make application for the granting of such privilege, agreeing in their application to pay for pasturage such reasonable compensation as may subsequently be fixed by the honorable Secretary of the Interior, if their applications shall be approved. The number of cattle and horses admitted to graze during the grazing season for this year has, however, been limited and fixed as follows:

	Cattle.	Horses.
Gila River	200,000	5,000
Pecos River	40,000	600

All of which is most respectfully submitted.

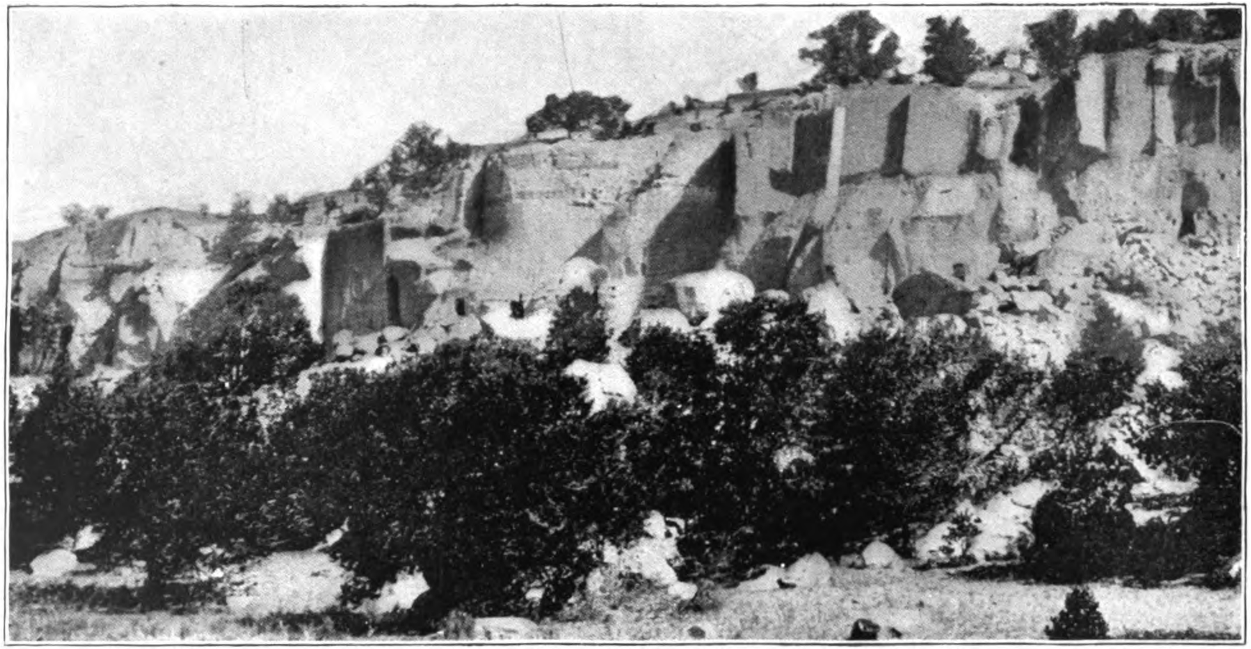
R. C. McClure,
Acting Superintendent.

Governor M. A. Otero, *Santa Fe, N. Mex.*

PREHISTORIC TIMES.

Among the Pueblos the houses were communal as well as the lands, the building consisting of from two to five stories, each successive one receding several paces from the face of the one immediately below it, and each entered only from above by means of scaling ladders let down or taken up for that purpose. These edifices were constructed of adobe (sun-dried bricks), cobblestones held together by adobe mortar, or matched stone without mortar, the numerous rooms being ceiled with beams covered with earth. Each village or community usually contains two or three of these buildings, which looked more like fortresses than dwellings, though indeed designed for both purposes.

One such structure at Weqwgi was 700 feet in circumference and contained 99 rooms. Pueblo Bonito was 544 feet long by 314 feet wide, with 300 apartments. The pueblo of Penasco Blanco was 1,700 feet long and comprised 112 rooms. Among the remains of the sacred city of Pecos are the ruins of the temple, which for ages preserved the holy fire of Montezuma. Its dimensions are 191 feet in length, 35 feet in breadth, and 50 feet in height, encompassed by walls 6 feet



Homes of the Cliff Dwellers.

in thickness. The interior is divided into compartments, having cells, cisterns, and tanks, but the outworks and turrets are a mass of ruins.

The Taos pueblo, in the northern part of the Territory, is one of the finest specimens of these ancient dwellings to be found in modern use. There are two houses, on opposite sides of a small stream, between 300 and 400 feet long by about 150 feet wide, anciently connected by a bridge. They are five and six stories high, terraced from bottom to top, divided into numerous compartments, with entrance to each story, as above mentioned, by ladders giving access to trap doors in the roof. With these ladders drawn up at night and a sentinel stationed upon the housetop to give notice of approaching danger, the peaceful Pueblos could sleep in security, though surrounded by marauding hordes of bloodthirsty Apaches, Navajoes, and Utes. In these buildings at Taos about 800 men, women, and children, like one family and in apparently the greatest harmony, occupy the identical abodes used by their forefathers for generations prior to the birth of Columbus or that of his royal patrons.

Following is an interesting article upon a strange race of people known as the "cliff dwellers," long since vanished from the face of the earth, but enough traces are left to make scientists eager for further investigation of what was once the home of this now extinct people:

CLIFF DWELLERS.

Very important explorations have lately been made in the Santa Clara Cañon in regard to the famous cliff dwellers, which are visited every year by hundreds of people. This party of explorers measured the communal building of the ancient and abandoned cliff dwellers, and found it to be 300 by 400 feet, three stories high, and containing approximately 2,000 rooms. They excavated two rooms and found the walls in good state of preservation, with some evidence of building skill. They discovered considerable pottery beautifully decorated with geometrical designs and partly glazed, something unusual, as the pottery heretofore found was generally unglazed. Many turkey bones gave evidence that the ancient occupants knew the good points of the national bird. The turkey corrals were found to be small and connected with the living rooms by a low archway only high enough for a turkey to slip through. In the two rooms pipes of an unusual shape were found. One was in imitation of a prickly pear and the other of a cactus. There were evidences that the cliff dwellers grew tobacco, and the charred corn found proves that they also grew corn. There was evidence that the building had been deserted in haste and that the cliff dwellers had left nearly everything behind them. The most important discovery, however, was that of nine skeletons almost complete. The skulls show that the cliff dwellers were not Indians, but were allied to the Caucasian race. The back of the skull is flat, but the forehead is well developed. The chin is strong, and the appearance of the face must have been long, slim, and intellectual. They had beautiful teeth, but, strange to say, instead of incisors they had grinders, which, according to the theory of evolution, is proof that they were vegetarians for many ages before being driven out by invaders or by some calamity. One of the skulls had been pierced by an arrow on one side, while on the other it was fractured as if by a tomahawk. The man to whom it belonged had perhaps fallen while repelling an attack by the Indians. One femur measured 19½ inches, and the skeleton to which it belonged must have been between 7 and 8 feet high.

The burying places at Santa Clara have not been discovered yet, but it is known that the cliff dwellers were buried in a stooping position, with their heads between their knees and the feet pointing to a common center. Skulls were found with long red hair by this exploring party, and also monuments with inscriptions that resemble Chinese characters, while on the Gila River monuments were found that seemed to be of Egyptian origin. One well-known scientist in the party has made a study of the subject, and feels positive that the cliff dwellers belonged to another race than the Indian. It is believed that the dwellings are from 1,500 to 2,000 years old, and that the Santa Clara settlement was abandoned on account of the eruptions of the crater, not far from here, which threw out the immense lava fields that cover large areas to the west of the city of Santa Fe. The relics found include instruments used for dressing hides; pottery, some of the pottery being very large; skeletons, and other remains of the cliff dwellers.

These discoveries prove that long before Columbus set foot on the shores of the New World the valleys and plains of New Mexico were the seat of a civilization which has been the wonder of scientists and explorers; for ages unknown people contended for the possession of the lands and streams. Nation after nation of strange beings followed each other in conquest, and to-day, as above stated, evidences are to be found in the ancient settlements of their unknown inhabitants. The old pueblos in New Mexico are the homes of the descendants of the cliff dwellers, and the antiquarian will find enough of what is old beyond tradition, yet new to the nineteenth century, to keep him occupied for years in patient research. It is not necessary to go to Egypt or Persia to find ruins and relics of people who have passed from the face of the earth; they can be found right here in New Mexico and within easy reach of comfortable homes and hotels.

SANTA FE, N. MEX., *August 31, 1900.*

DEAR SIR: In compliance with your request, I inclose an article reviewing the discoveries lately made, and the theories put forth by those who have studied the subject in relation to the cliff dwellers and other prehistoric remains found in New Mexico.

Yours, respectfully,

PAUL A. F. WALTER.

Hon. M. A. OTERO,
Governor of New Mexico, Santa Fe, N. Mex.

New Mexico is a land of mysteries. It is a vast storehouse of antiquities, whose value to the scientific world has been recognized fully only of late years, although Humboldt already alludes to them in his writings. At every turn in this Territory the antiquarian encounters that old and yet ever new problem of humanity: "Whence art thou?" and its complement, "Whither goest thou?" Here, if anywhere, will be solved the problem of the identity of the first human settlers of this continent; here may some day be found the key to the secrets of the civilization of the Aztecs. But it will take years, perhaps centuries, of scientific research and study. These can be prosecuted only if the ruins and their contents, as they exist to-day, are protected from the hands of vandals and pot hunters. As most of the ruins are situated on public land, it is in the province of the National Government to say to the vandals: "Halt! This is the property of the United States and dare not be despoiled of its treasures!"

Scientists have occasionally visited some of the ruins of prehistoric times in New Mexico. They have even explored thoroughly one locality or the other, and then formulated theories to explain the presence of particular antiquities they saw and they studied. The difficulty has been to distinguish the early remains from the later remains in the same locality. There has been no general, no authoritatively uniform, no thorough research or comparative study made of the prehistoric remains in this Territory, such as can be carried on only under Government supervision and at Government expense, by men who are willing to devote a lifetime to the work.

No wonder, therefore, that there are half a dozen theories diametrically opposed to each other, advanced by men of repute, to account for the wonderful ruins in this Territory. While Prof. E. L. Hewett, of Las Vegas, who more than any other man of late years has made a specialty of research among the ruins of the cliff dwellers, believes that primitive man made the caves in Pajarito Cañon, and is hopefully looking for indications of Tertiary man beneath the floors of the ancient caves, C. F. Lummis, of Los Angeles, who also studied the cliff dwellings, stoutly maintains that they were inhabited only by the present Pueblo Indians, and are not more than five centuries old; while Rev. G. S. Madden, of Bland, who has made some valuable finds lately, believes that Montezuma set out from the communal buildings in the Rio Grande Valley to conquer Mexico, and that perhaps the ancestors of the Incas lived at one time near the present Santa Fe. Dr. Cobern, of Denver, who a year ago was certain that the cliff dwellings are only five hundred years old, now is looking for evidence among the ruins to show that the dwellers in the communal buildings were driven out thousands of years ago by seismic disturbances and eruptions of lava from the volcanoes that once belched fire and smoke, but now stand like silent sentinels along the Rio Grande over graves so old that the tombs of ancient Egypt seem modern in comparison.

While these theories appear irreconcilable, yet they all may contain some truth, some approximation at the history which extends to the time when humanity was in its infancy. The civilization that built the Gran Quivira differed from that which fashioned the cave dwellings; the people who covered the walls of the Pintada Cañon with pictographs had but slight, if any, relation to the people who reared seven-story communal buildings without cement near the present New Mexico-Arizona boundary. There were cave makers as well as cave dwellers; there were cliff builders and builders of communal palaces. One people may have driven out the other, or one civilization may have been superimposed upon the other, or perhaps mingled at the extremes at which they met. There may have been four or five successive stages of the same civilization, but that is barely probable, and future scientists may find that New Mexico underwent five conquests from the time of the primeval cave makers until the day of the American invaders. But thus far there have been only theories—theories built upon very slight premises and not upon any convincing evidence. It remains for the geologist, the ethnologist, the antiquarian, and perhaps, some day, the philologist and the historian of the future, to construct a history of the people who built and dwelt in the thousands of lonely ruins which are now scattered from western Texas to southwestern Colorado, and from the San Juan to the Gila and farther south. They may be able at some future day to decipher the pictographs and the petroglyphs which abound in that section, and for which no Rosetta stone exists.

The very heart of the cliff dwellers' region, and undoubtedly the section where the oldest cave dwellings are to be found, is on the west side of the Rio Grande, extending from a point west of Santa Fe to a line north of Espanola. It is a country naturally adapted to the making of caves. There within an area of 40 square miles the cave and cliff dwellings cluster thickly on the cliffs like swallows' nests along the eaves of a roof. Not that cliff dwellings are not found beyond that section—they are so found by the thousands to the north, to the south, and to the west, but they all bear evidence of being more recent in construction. The cliff dwellings in the Rio Grande Valley are gathered into scores of communities—some large and some small—showing that in a comparatively small area there lived as many people as to-day are found in the whole of New Mexico. That section of New Mexico is covered with tufa, a mixture of gravel and sand thrown up by the surrounding volcanoes, to the depth of 30 to 200 and in some places to a depth of 1,500 feet. Underneath this is a strata of black lava, and immediately underneath is found the Tertiary rock. This seems to indicate that the volcanoes round about were active in that era. The tufa has been washed or worn so as to leave ridges extending from the west to the east, sloping on the northern, but perpendicular on the southern side. The caves were made in the tufa while it was still soft and yielding. It is hard as flint now. The caves were not natural caves, for the marks made by the tools that fashioned them are still discernable on the walls under several coats of plastering. The original caves were made in a very rude manner, for primeval man made nothing but that which he needed for the moment. They resemble the caves found in France and in Germany and which are now known to have been the homes of men in the stone age, which preceded historic times. How long the American cave makers occupied their caves may never be known. They were probably fishermen and hunters. They left a few stone implements, but otherwise no relics, no graves, no inscriptions, nothing but their imperishable dwelling places. Their first members lived in the age of the mastodon and the big saurians. They were men of the stone age, whose ancestors were undoubtedly the men of the Tertiary period, if any such men ever existed. They may have been driven southward by the glaciers of the ice age, which extended down as far as the southern boundary of Colorado and whose melting must nave flooded the valley of the Rio Grande year after year for many centuries; but that is mere supposition. It is simply known that the cave makers existed. Whence they came and whither they went will remain a mystery that will always baffle science.

The cave makers were probably followed by the cave and cliff dwellers, who evolved a higher degree of civilization than their predecessors, a civilization whose growth can be traced upon the remains of pottery that are still found in the caves and burial mounds. First the pottery consisted merely of earthenware of rude form and made of black earth. With years it became more beautiful in form. One day a simple decoration of straight lines was added. Then came more elaborate designs. Then glazing was introduced and perfect lines of salt glazing, a lost art to-day, are found on pottery whose decorative designs show animals of queer shapes, buildings that look like smelters with tall chimneys, and pictographs. They brought their clay from a distance, the same as their ores, which they learned to smelt and to fashion into metal tools. They made musical instruments and had smoking implements. They made ornaments of tourquoise and of gold. They wove cloth, not at right angles but in circles, from a center outward. First they plastered the walls of the caves with a composition of black lava and in a later age with white cement with which they also covered the floors. Under those floors some day the chief antiquarian treasures may be found. Later still, they divided some of the caves into rooms by partitions and built outbuildings or additions upon ledges outside of the caves. After that they built houses of stone on the cliffs, first, only of 1 to 5 rooms, then, as if on a sudden inspiration, houses of 100 to 150 rooms, and at last by another bound palaces of 1,500 to 5,000 rooms, marking a transition from a people living in isolated caves to a nation having large cities and practicing all the arts of an advanced civilization. It is in those days, probably, when the rainfall became less and the rivers were drying up, that immense systems of irrigation were built, only a few traces of which remain to-day. They built roadways which are worn deep into the stone, a sign that they were traveled by thousands of people for thousands of years. They began to erect burial mounds which to-day are veritable treasure houses of antiquities. They began to carve pictographs on the cliffs. They domesticated animals and tilled the fields, planting them with corn, as charred ears of corn are found with their other remains. Skeletons found in the burial mounds indicate that they were a people of gigantic stature, 6 to 8 feet high, although some writers maintain that they were a small people; that they had large heads and intellectual brows, but that they differed in features from any race that exists to-day. Sunstones that reflected the sun on their hearths seem to show that they were sun worshipers, and they probably knew something of astronomy. The absence of any idols thus far in the ruins seems to prove that they were not idolators.

There is one striking feature of the cliff dwellers' period which must always be kept in mind. Its climate differed materially from that of to-day. The ravines and canyons were sparkling rivers. The top of the cliffs and the mesas beyond were cultivated. There exist traces of reservoirs and irrigation canals which would be of no earthly use to-day, for water has to be carried 35 miles and there are no natural reservoir sites near by at a greater elevation than the cliffs. This change of climate since the days of the cliff dwellers gives some clue to the age at which they were most numerous. Great as this age is, it is modern compared with the age of their predecessors, the cave makers.

One day, perhaps within historic times, there came a catastrophe. Whether it was a seismic disturbance such as at that time or later crumbled and tore asunder the walls of the communal buildings; whether it was a great flood like the deluge; whether it was an eruption of barbarians from the north who came across the Behring Strait, may never be known; but it seems certain that some of the cliff dwellers escaped, or else that the catastrophe was preceded by a gradual drying up of the rivers and the gradual decline in the amount of rainfall, which drove some of the cliff dwellers to the south, where the route they took is indicated by the cliff dwellings and communal buildings along the Gila and by the caves inhabited to the present day in Mexico. They may have founded the Montezuma dynasty, or even made their way through Central America to the table-lands of Peru and Bolivia, where, on the shores of Lake Titicaca, they founded a civilization far more advanced and splendid than that along the Rio Grande in New Mexico. Another migration went west. In the vicinity of the modern Gallup it reared communal buildings of stone without cement, seven stories high and 50 feet in diameter. None of the stones in any of the communal buildings, however, are larger than a man of ordinary strength could conveniently handle. They may have founded the seven cities, the legend of which enticed Fray Marcos, three hundred and fifty years ago, to the deserts of New Mexico and Arizona. To-day all trace of these people has been lost in that section except the buildings they reared, the relics they contain, and the civilization which they may have taught the Moquis and the Zuñis.

Another party of the cliff dwellers went to the north, where, in Chaco Cañon, in San Juan County, and in the Mancos Cañon and on the Mesa Verde, in southwestern Colorado, they reared the communal buildings, which, to the present day, are the admiration of the tourist, but which are now being destroyed and looted for alleged scientific, but principally for commercial, purposes. A fourth expedition of cliff dwellers may have gone southeast, and if recent discoveries made in western Texas are correctly reported they dwelt in that part of the country for a while. But the cradle of all those people stood along the Rio Grande in northern New Mexico. The cliff and cave dwellings and the communal buildings around Espanola and west of Santa Fe are by far the oldest, and from there radiated the people that at a later time built the communal buildings in other parts of New Mexico, Arizona, and Colorado. At least such is the trend of the discoveries thus far made. The cliff dwellers deserted their original homes suddenly. No remains indicate that they were slaughtered or died suddenly in great numbers. They left while they were preparing their evening meal, and if the cause of their sudden departure can ever be learned it will be a story of the greatest tragedy, outside of the Deluge, of which the world has any record.

Then came the Pueblo Indians. They imitated some of the arts of the cliff dwellers. They fled to the caves and inhabited them whenever danger threatened them. They were adobe not stone, builders. They plastered the smoke-covered walls of the cave dwellings with adobe mud. They fashioned their pottery after that which they found around the hearthstones of the cliff dwellers. They built communal buildings and corrals of adobe. They made stone idols, which the Spanish conquerors destroyed by thousands. They could not occupy the caves, cliffs, and communal buildings left by the cliff dwellers permanently, for the land round about had become parched, the cliffs had been rent asunder, and the paths between the cliffs and communal buildings, which had been worn by thousands of bare feet in the course of thousands of years, became impassable on account of clefts in the rocks. The Pueblos were dwellers along river banks, where they applied in a primitive way the methods of irrigation they had seen high on the barren mesas and cliffs. They built cities like the Gran Quivira, with its fabled treasures; the pueblos of Acoma, Zuni, Taos, and others more or less old.

Then came the nomad Indian tribes, the Apaches, the Comanches, the Navajoes. Battles were fought, pueblos destroyed, and an incessant warfare was waged.

Soon thereafter the Spanish conquistadores appeared. They reared buildings like the old palace at Santa Fe, which now are historic, too, and worthy of preservation. What fitter place could be found for a museum of New Mexico antiquities, an adjunct to the Smithsonian Institution at Washington, than the historic palace at Santa Fe?

What a tremendous lapse of time between the cave makers and the present rulers of this country! What an immense vista of history that was enacted along the Rio Grande from the time its waters were imprisoned as a lake above the cañons and cliffs west of Santa Fe until to-day, when its channel has cut deep through the tufa, the lava, and the Tertiary rock, and now bids fair to be lost in the sand it carried down from the mountains in the north! Egypt, Babylon, Greece, and Rome, and even the most distant days of China, seem but yesterday against the time when the cave makers made their first caves along the Rio Grande. It was in the days of the mastodon, the plesiosaurus, the ichthyosaurus, whose bones are so frequently unearthed in the country of the cliff dwellers; when the palm cast its shadows over purling streams, and the gigantic ferns nodded in quiet pools of water; when the desolate cañons and the dry ravines of to-day were living rivers, and when the fire had not yet died out of the chain of volcanoes of the Great Divide. A land of mystery indeed; a strange land, a weird land; a land that must ever attract the tourist, the scientist, the story-teller, the poet, the philosopher, the seeker after truth!

Should the man with a small soul and a smaller intellect be allowed to destroy those ruins? Should he be permitted profanely to rob the grave of a bygone civilization? Should he unhindered erase altogether the scant records that bygone races have left? In the Rio Grande Valley may be found burial mounds where vandals have with heavy pick and sharp shovel destroyed a dozen ancient pieces of pottery, several skeletons, and other precious remains to get out two pieces of pottery that, on account of their modern glitter, aroused their cupidity. In Chaco Cañon, in San Juan County, for many years already excavations have been going on systematically, brutally, on a large scale, ostensibly for museums widely scattered, but, what is worse, also for commercial purposes. Every day pot hunters go out to bring home relics by the cartload and to scatter them to the winds. Men who have dabbled a little in antiquities bring to their homes treasures to adorn their parlors, but which are lost forever to science. Indians, with no idea of scientific values, are hired to dig out pieces of pottery that from the antiquarian standpoint are of small value compared with those which are destroyed in the search. A halt must be called at once! The nation must be aroused! The Government must realize that what the Pyramids are to Egypt, the Parthenon to Greece, the Coliseum and Pompeii to Italy, that and more are the cliff dwellings and the communal buildings to the United States. Every foot of ground of that sacred region should be carefully scrutinized by the scientist; every shovelful of earth should be minutely sifted by the antiquarian. All excavations should be carried on under the supervision of the Government, and as carefully as the ruins of Pompeii and Herculaneum have of late years been uncovered.

It is not necessary for the preservation of the cliff dwellings and the other prehistoric remains grouped around them to withdraw large areas of public land from settlement or to prohibit grazing upon them. The purpose can be accomplished by the appointment of a custodian with a force of keepers or patrolmen, who will protect the ruins from vandals, will render all assistance possible to those who desire to visit the cliff dwellings or to study them, and to take part in making accurate maps and to help in any excavations that may be carried on under Government control.

The following description of the cliff dwellings in the Pu Ye cliff appeared in The Land of Sunshine in June, 1900, and is both graphic and accurate:

"The lower portion of the cliff is covered by a talus more than 100 feet in height, above which is a perpendicular face 60 to 70 feet high, at the top of which is a bench from a foot to 20 feet wide, and back of that from 10 to 30 feet more of cliff. This upper portion is very much harder in texture, and seamed and creviced, as the lower portion is not. There are stairways or steps cut in the rock, by which the bench and the top were to be reached. In the face of this cliff are more than 800 caves, in places arranged one above another, 4 in the lower face and 3 in the upper. Many of the bottom tier of caves have had the talus leveled off and a stone pavement 4 to 5 feet wide laid before the entrance.

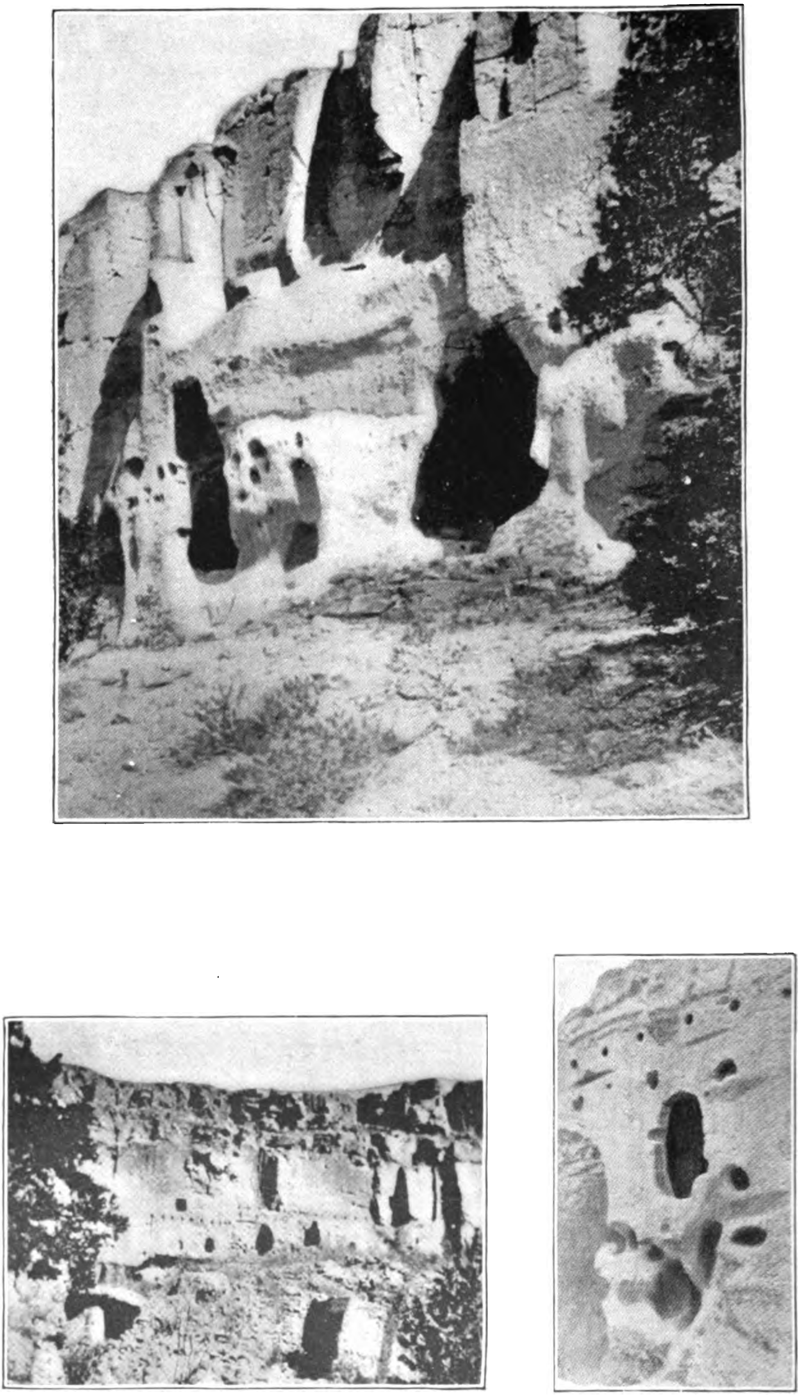
"Over such caves were rows of round holes cut into the wall, evidently used to support the logs of an outer room, whose roof made an approach to the second tier of caves. This was repeated, so in its time the town must have been of several stories, terraced, and with caves in the rear.

"The doorways and entrances were often small and usually low, compelling all to stoop—and sometimes creep—to enter. The caves were excavated from a foot to 4 feet from the outside, oval in shape, and generally measuring about 5 feet in width and height, with small niches in the walls, used probably for storage. Over the door a hole was cut to the outside, which admitted light and afforded an exit for smoke, and beneath this, on one side of the door, the fire was built. The ceilings, though blackened by smoke, show the chipped appearance produced by the rough tools of the cave makers, but the bottoms of the walls in some have been plastered. Chipping a piece from the plaster, we find it is simply a thin coat of adobe clay, such as is used by the Pueblo Indians in the valleys to-day. Beneath this is another coat of plaster, harder than the first, containing sand and looking like cement, and behind this are the grimed and rough walls of the cave.

"Upon the summit of the cliff we stop amazed as we look upon the ruins of a 'cut' stone building which covered 50,000 square feet. It was nearly 300 by 200 feet in size, and, if but one story in height, once contained 1,200 rooms; but in reality it was at least three stories high. The rooms are clearly outlined by the walls still standing from 3 to 5 feet high, though buried in the accumulated débris of centuries. Clearing several, we found them 5 by 12 feet in size, arranged in series or suites of nine rooms each, opening to the center, or placita, of the main building; so that you pass through eight rooms to reach the last or outer one. The walls and floor were plastered with a hard, gritty cement, and charred pieces of logs indicated it was destroyed by fire. The average size of the caves and of those rooms, with their low, narrow entrances, indicate the cave makers and the cliff dwellers were smallish people. Nor is there in all of their stonework a block of stone too large for a 14-year-old boy to handle.

"All about this building are scattered pieces of obsidian, agate, and pottery, while near by among the cedar bushes may be found corrals covering several acres, showing these people kept turkeys and other domestic animals.

"Standing upon the ruins of 'Casa Grande,' what a magnificent view is spread out before us of valley and mountain, hill and canyon, mesa and precipice! Below us are the dark-green tops of the pines under which the camp is pitched, and beyond the red-brown heads of the grama grass covered the mesa over which we had driven. Three thousand feet below us in the valley the isolated butte of Flat Top looked like a punctuation mark on the long line of the Rio Grande, visible from the Chama to the White Rock Canyon. The fields, green with corn or alfalfa or yellow with oat stubble, made a striking and beautiful contrast with the somber green of the pine forests beyond. Over these and above the timber line, from 11,000 to 13,000 feet high, towered 'the Truchas,' the 'Lake Peaks,' and round-topped 'Old Baldy,' brown and gray in their nakedness. In the north were outlined the Spanish Peaks of Colorado—a dark blue against the turquoise of the summer sky; in the south the Ortiz Mountain, and in the west the serrated tops of the Santa Claras—frame and picture which Nature alone could make; and her lavish hand has laid on the colors blue and gray, yellow and red, orange and green, in all shades, contrasted and harmonious. And as we look the cave people of the past are for the moment forgotten, and we stand silent in this magnificent and beautiful presence."



Homes of the Cliff Dwellers.

BURIED TREASURES.

REMAINS OF A GREAT CITY NEAR THE WHITE OAKS ROUTE.

What reader of old Spanish history and versed in the traditions of "New Spain" has not heard of the "lost treasures of Gran Quivira?" Mention is frequently made of it in the old Spanish chronicles, and many persons have sacrificed their lives seeking for its hiding place.

According to the old Spanish chronicles, Gran Quivira ruins are located about 175 miles northeast of El Paso, on the western border of Lincoln County, N. Mex. The outlines of the once large town or pueblo are still plainly visible. The walls of the old adobe church are still standing and the outlines of the other buildings are plainly discernible.

History and tradition of this old town are both corroborated by the surroundings. The old Spanish history tells us that here was located the seat of government of New Spain, where all the wealth of the country was then brought and teemed in treasure vaults of church and state. According to the Spanish records, Gran Quivira was a large Indian village at the time of the first Spanish conquest, and was wrested from its Indian occupants about the year 1616. In 1661 came the great Pueblo Indian uprising, when the Spaniards were driven out of the country as chaff is driven before a wind. De Vargas, the writer of the chronicle, says: "We traveled to the southward, fighting all the way. We had 270 burro loads of treasure. We buried it between two little hills, burning brush over the spot." The Spaniards were driven out of the country as far south as the Gulf of Mexico. Where are the two little hills De Vargas speaks about? Attempts to solve this problem have cost many an adventurer his life. All around Gran Quivira can be found holes dug in the ground where some poor deluded mortal has been seeking for the "lost treasure of Gran Quivira."

The Spaniards returned to the country again after an absence of twenty years, returning here in 1681. They found Gran Quivira in ruins, having been destroyed by a volcanic eruption. The Malpais had been thrown up and the town was found a heap of ruins, as found to-day. To bear out these old traditions Spaniards' remains are to be found in the graveyard, while Indian skeletons are found in the ruins of the houses.

Coming to Gran Quivira from the west, the sight of the old ruins is ghost-like, indeed. The sun is nearly down, its last rays are shining on the gray walls of the old church, with the outlines of many of the other buildings plainly visible. It is a sight never to be forgotten. There we stood for a time, our mind centered upon what must have been the scenes that transpired here over three hundred and fifty years ago, when this was perhaps the largest and most prosperous town of what is now the great union of States. It most forcibly impressed these words upon us: "Man is a vapor, full of woes; he cuts up a caper, and down he goes." The same can be truthfully said of empires and villages.

But back to our subject. When the Spaniards returned and found Grand Quivira in ruins they pressed on northward in their fight against the Pueblos, finally conquering them at Santa Fe, where the Indians were divided up into smaller bands, as we find the Pueblos to-day. All along the foothills and far up on the mountain sides of the San Andres and Sacramentos are to be found the ruins of former inhabitants. At Gran Quivira and many other places in the Lost River basin can be seen the outlines of former irrigation canals and many other evidences of a former civilization, all of which assist in the verification of the truthfulness of the traditional history of the country.

The ruins of old Gran Quivira are located about 30 miles from Milagro station on the El Paso and Northeastern Railway. Between the ruins of the old town and the railroad are the great Malpais, or Gran Quivira lava beds, the most recent of the volcanic upheavals in the southwest. The crater of this now extinct volcano is located about 5 miles south of Gran Quivira, and is, to all appearances, bottomless. A large spring flows out from the south end of the Malpais, whose waters are 18 per cent salt. Strange to say, myriads of a peculiar species of fish are to be found in this salt water. They are the only living creatures found in it, and they seem to thrive there.—El Paso Herald.

"THE ADOBE PALACE."

The old residence of the governors-general under Spanish and Mexican rule, known as the "Palace," which for more than three hundred years has been the headquarters of the governors, captains-general, and chief executives of the Territory, province, or kingdom, is now in an admirable state of preservation, owing to the liberal appropriations made by the Government in the past. I regret to say, however, that unless the General Government continues to look after this historic old building, as it has in the past, it will soon go to ruin and decay.

It is at present occupied in the west end by the post-office; in the center as the residence and office of the Territorial secretary, and in the east end by the governor for his office and the historical society of the Territory. This last institution has stored therein many rare and curious images and other works of prehistoric races found in the Territory, as well as ancient arms, armor, and articles of household use.

In an act passed by Congress donating lands to the public schools and institutions of the Territory, approved June 21, 1898, by inadvertence a clause was inserted, being the last three lines of section 6 of the act, donating this historic old building to the Territory, as follows:

> The building known as the "Palace," in the city of Santa Fe, and all lands and appurtenances connected therewith and set apart and used therewith, are hereby granted to the Territory of New Mexico.

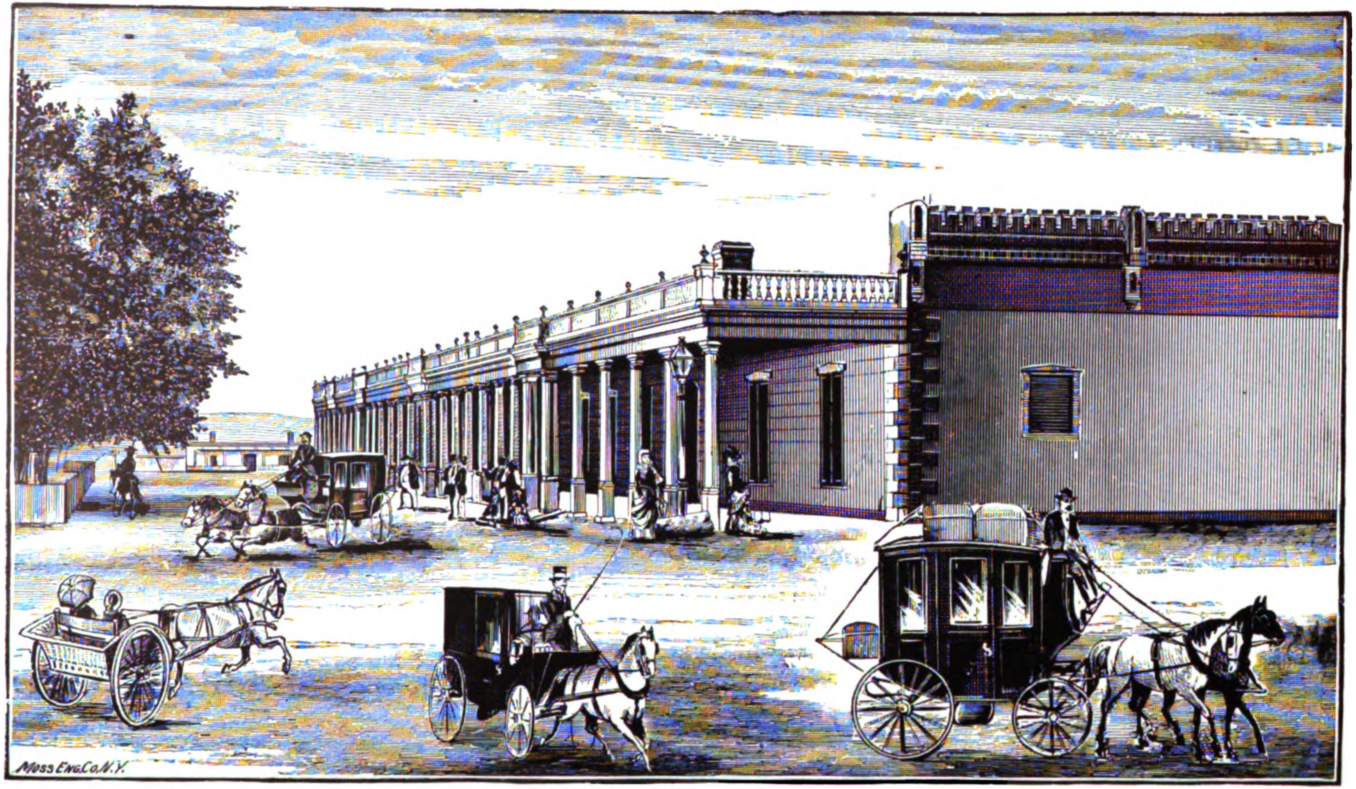
This clause does not meet with the approbation of our citizens, who believe that so long, at least, as we are a Territory, this palace should remain under the fostering care and protection of the Genera' Government.

The Territory is not financially able to take proper care of and preserve this building as should be done, as it requires all the revenue possible to maintain its own public buildings and institutions which are necessary to the proper conduct of its government. In addition, our people feel that the United States owning and caring for this building puts it in closer touch with all of our citizens, and accordingly I most earnestly recommend that such clause of section 6 of the act above referred to be repealed.

In this connection, showing the historical association connected with this old building, I desire to quote from the report of my predecessor, Hon. L. Bradford Prince, made in 1890. The accuracy of the statements here made can not be doubted, as ex-Governor Prince has made a study of New Mexico and has written a history of the Territory which is recognized as an authority.

Ex-Governor Prince, in his report, says:

> Without disparaging the importance of any of the cherished historical localities of the East, it may be truthfully said that this ancient palace surpasses in historic interest and value any other place or object in the United States. It antedates the settlement of Jamestown by nine years and that of Plymouth by twenty-two, and has stood during the two hundred and ninety-two years since its erection not as a cold rock or monument, with no claim upon the interest of humanity except the bare fact of its continued existence, but as the living center of everything of historic importance in the Southwest. Through all that long period, whether under Spanish, Pueblo, Mexican, or American control, it has been the seat of power and authority. Whether the ruler was called viceroy, captain-general, political chief, department commander, or governor, and whether he presided over a kingdom, a province, a department, or a Territory, this has been his official residence.
>
> From here Oñate started in 1599 on his adventurous expedition to the eastern plains; here, seven years later, 800 Indians came from far-off Quivira to ask aid in their war with the Axtaos; from here, in 1618, Vincente de Salivar set forth to the Moqui country, only to be turned back by rumors of the giants to be encountered; and from here Peñalosa and his brilliant troop started on the 6th of March, 1662, on their marvelous expedition to the Missouri; in one of its strong rooms the commissary-general of the Inquisition was imprisoned a few years later by the same Peñalosa; within its


Moss Eng.Co.N.Y.

Adobe Palace, Seat of Government 300 Years ago at Santa Fe.

walls, fortified as for a siege, the bravest of the Spaniards were massed in the revolution of 1680; here, on the 19th of August of that year, was given the order to execute 47 Pueblo prisoners in the plaza which faces the building; here, but a day later, was the sad war council held which determined on the evacuation of the city; here was the scene of triumph of the Pueblo chieftains as they ordered the destruction of the Spanish archives and the church ornaments in one grand conflagration; here De Vargas, on September 14, 1692, after the eleven hours' combat of the preceding day, gave thanks to the Virgin Mary, to whose aid he attributed his triumphant capture of the city; here, more than a century later, on March 3, 1807, Lieutenant Pike was brought before Governor Alencaster as an invader of Spanish soil; here, in 1822, the Mexican standard, with its eagle and cactus, was raised in token that New Mexico was no longer a dependency of Spain; from here, on the 6th of August, 1837, Governor Perez started to subdue the insurrection in the north, only to return two days later and to meet his death on the 9th near Agua Fria; here, on the succeeding day, José Gonzales, a Pueblo Indian, of Taos, was installed as governor of New Mexico, soon after to be executed by order of Armijo; here, in the principal reception room, on August 12, 1846, Captain Cooke, the American envoy, was received by Governor Armijo and sent back with a message of defiance; and here, five days later, General Kearny formally took possession of the city, and slept, after his long and weary march, on the carpeted earthen floor of the palace.

From every point of view it is the most important historical building in the country, and its ultimate use should be as a home of the wonderfully varied collections of antiquities which New Mexico will furnish.

Coming down to more modern times, it may be added that here General Lew Wallace wrote Ben Hur, while governor, in 1879 and 1880.

COUNTIES.

There are now 20 counties in the Territory of New Mexico, which are as follows:

NORTHERN TIER.

Colfax; county seat, Springer. Taos; county seat, Taos. Rio Arriba; county seat, Tierra Amarilla. San Juan; county seat, Aztec. Union; county seat, Clayton.

CENTRAL GROUP.

Mora; county seat, Mora. San Miguel; county seat, Las Vegas. Santa Fe; county seat, Santa Fe. McKinley; county seat, Gallup. Bernalillo; county seat, Albuquerque. Valencia; county seat, Las Lunas. Socorro; county seat, Socorro. Sierra; county seat, Hillsboro. Guadalupe; county seat, Puerto de Luna.

SOUTHERN TIER.

Lincoln; county seat, Lincoln. Dona Ana; county seat, Las Cruces. Grant; county seat, Silver City. Eddy; county seat, Carlsbad. Otero; county seat, Alamogordo. Chaves; county seat, Roswell.

BERNALILLO COUNTY.

Bernalillo is one of the largest counties in New Mexico, both in area and population. It is of irregular shape, about 200 miles long from east to west, with an average width of 50 miles from north to south, containing a little over 10,000 square miles, being larger than any of the New England States except Maine.

The present population of the county is estimated at 35,000, one-third of which is within a radius of 5 miles from the court-house in the city of Albuquerque.

An act was passed by the last legislature providing for the creation of a new county out of a portion of the western end of Bernalillo, to be known as "McKinley County," but the law has not yet gone into effect.

The county presents a great diversity of topography and climate. There are several detached mountain ranges, having altitudes as great as 12,000 feet above sea level, large areas of high mesas or table-lands, with altitudes varying from 6,000 to 9,000 feet, and valleys ranging from 4,000 to 6,000 feet.

CHIEF INDUSTRIES.

The principal industry at present in the mountain districts is mining, though grazing is carried on to some extent, especially in the timbered sections of the mountains, and during the winter season, as there is rarely snow enough, except near the top, to cover the grass, and the trees and brush furnish the animals a good measure of protection against the severe winds, which sometimes sweep over the mesas at that season. There is also a little farming done in the canyons, though in a very small way, the principal crops being potatoes, beans, and chili, and some wheat and oats. The mountain sides, when not too steep or broken, are found to be excellent fruit lands, and the crop is more reliable there than in the valleys, because less liable to injury from late frosts in the spring. Apples, especially the winter varieties, do better in the mountains than elsewhere, and it is believed by many that fruit growing on the mountain slopes will become in time a very important industry. In nearly all the mountain districts the rainfall during the growing season is sufficient to produce crops without irrigation.

The mesas or table-lands are usually long stretches of plain, varying in width from 5 to 20 miles, and extending from the base of the mountains in the direction of the valley, with an inclination of only a few feet to the mile, and ending abruptly in a range of bluffs or sand hills, which form a background of brown for the verdure of the valley. These mesas are the principal grazing districts. In seasons of average rainfall the grass grows abundantly, and owing to its peculiar character it "cures" on the ground during the fall, and instead of "washing out" and becoming valueless, like the ordinary prairie grass, it is like hay and makes almost as good feed in the winter as in the summer. These plains are dotted at all times of the year with herds of cattle and flocks of sheep. During the summer and fall the animals have to be "held" comparatively near the springs or water holes, because cattle have to range where they can go to water during the warm weather once a day and sheep at least once in two days, but after the weather gets cool and a little snow falls on the grass the animals, especially the sheep, can go a long time without drinking, and this gives them practically a fresh field in the winter, because it enables them to range over sections that they could not reach in the summer because of the distance from water, and water in New Mexico is with the ranchman, as with the farmer, the first consideration.

IRRIGATION.

By the construction of storage reservoirs in the mountain canons to catch the storm waters which come down in great volumes during the rainy season, in July and August, and to conserve the waters of the small streams, a large proportion of this mesa land can be rendered arable and made to produce good crops. The soil is unusually strong, especially in the mineral elements, being composed almost wholly of detritus from the neighboring mountains and lacking only the addition of a very little animal or vegetable matter now and then to keep it rich indefinitely. But as a rule the construction of such works would promise so small an income in proportion to the capital required that private enterprise will never undertake it as long as money can earn as much in other lines as it is able to earn now, and unless the reclamation of these lands shall be undertaken by the Federal Government it is probable that the mesas of New Mexico will be left in the undisputed possession of the cattleman and the sheepman for many years to come. There are a few places in the county where private reservoirs have been constructed and are found to be successful in the irrigation of small tracts, but no work of this character on a large scale has yet been undertaken.

Nearly all the farming done in the county is done on the valley lands but a few feet above the level of the streams, and, owing to the semiarid character of the country, has to be all carried on by irrigation. Until recently no effort was ever made to introduce any modern irrigating system, but the work has always been done by the primitive methods in vogue among the natives of the country more than two centuries ago. This has retarded the development of the county by repelling immigration in the farming districts, and more than half of the richest agricultural lands, even in the famous valley of the Rio Grande, are yet in a state of nature. But better ideas now prevail and there is a good prospect that the Aztec method of irrigation will soon be superseded by a modern American system. As long as the river carried more water than could be used the old system, with its great wastefulness, was not so objectionable, but of late years so much of the water of the river is taken out by the great canals in Colorado that the farmers of New Mexico are practically limited to such water as rises within our own Territory, and this is insufficient to meet the present demands; hence the necessity of greater economy in the use of water. A company incorporated under the laws of the Territory is now at work on the construction of a canal which will have a length of about 40 miles, covering the most populous portion of the valley, and it is believed that its construction will render practicable the cultivation of all the land within that distance, whereas at present only about one-third of it can be cultivated. This will make places for a large number of new citizens and will do much for the development of that portion of the Rio Grande Valley in question, which is one of the most desirable sections of the Territory and one in which the farmers and gardeners are never without a good home market for all of their products.

AGRICULTURE.

It is not claimed that this section can compete with the great grain-growing States of the West in the production of such field crops as wheat and corn, and it would not be wise from a business standpoint for the owners of the land to devote it to such a purpose, because it can be made to yield so much better returns when given to other crops. The true policy here is to have small farms closely cultivated, and yielding as land can only be made to yield under irrigation. In the wheat and corn growing States a man is supposed to need 160 acres to make a profitable farm, but a much smaller area is required here. A well-known writer, who has had nearly twenty years' experience as the owner of a farm in the Rio Grande Valley in Bernalillo County, contributed an article to a recent publication by the bureau of immigration of this Territory, in which he took the ground that 10 acres of the valley land of this county, cultivated under irrigation, could be made to bring the owner a larger net cash return every year than could be realized from a quarter section in any of the grain-growing States, and he sustained his position by facts and figures drawn from actual experience. Detailing the manner in which the result mentioned can be achieved, the writer says:

> Sweet potatoes of most excellent quality yield abundantly in the soil of this valley, and do not require to be irrigated as often as most other crops, thus saving the farmer much labor. Both soil and climate seem to be peculiarly adapted to their growth, and the quality of the product is fully equal to the famous sweet potatoes of New Jersey, while a fair average crop will give from 900 to 1,000 bushels to the acre. They never sell in the fall for less than $1 a bushel, and those that are kept into the winter usually bring as much as $2. From this it will be seen that 1 acre cultivated in sweet potatoes in Bernalillo County will bring the farmer as much money as he could hope to realize from 80 acres in corn or wheat, in any of the grain-growing States, in a good year, and since the result is to be measured by dollars and not by acres, it will be seen that the irrigation farmer, although he may not be able to cultivate fields as broad as those of his neighbor in the "rain belt," has a better chance of success, and a decidedly better prospect of a balance to his credit in the bank at the end of the year,
>
> The onion is another product that seems to be peculiarly adapted to this section of the country. The large white Spanish onions, which grow to greater perfection in New Mexico than anywhere else in the United States, afford one of the most profitable crops that can be grown in this county, and is also one that can be brought to perfection only under irrigation. On account of its beautiful silvery color and its peculiar mild flavor this onion finds ready sale in any part of the country, and always commands the highest price. The yield is about 500 bushels to the acre, and the price at home ranges from $1 a bushel in the fall to $3 a bushel in the winter and spring.
>
> Celery and asparagus are also articles which are especially adapted to the soil and climate of this county, and attain here a degree of excellence but rarely found in such articles grown elsewhere. The celery is far superior to that grown in California, and is pronounced by all who try it fully as good in all respects as the Kalamazoo product, which is noted throughout the country for its superior quality. All the eating houses and dining cars on the western divisions of the Santa Fe Railway system now draw their supplies of celery from the gardens of Bernalillo County, whereas a few years ago they obtained such supplies from Michigan and California. And when it comes to asparagus this section can fairly claim to "beat the world," for nowhere else on the American continent is there produced asparagus which can at all compare with that grown in the valley of the Rio Grande. In many places in the valley there are large quantities of a salt which goes under the common name of "alkali," and which, though deleterious to some kinds of vegetables, is one of the favorite foods of asparagus, and does away with the necessity of applying salt to the ground, as is the custom wherever asparagus is grown in the Eastern or Middle States. It also causes the plant to attain in this section a degree of excellence in tenderness and flavor which is unknown in that grown elsewhere. During April and May, the months when the cutting is done, the shoots will attain, under favorable conditions a growth of about 6 inches a day, every particle of which is edible; there is no woody portion to be thrown away; the whole stock is soft and tender, and the flavor is proportionately superior. Sample lots of asparagus from this section have been sent to many parts of the country, and the verdict is always the same—"the best I ever tasted." Experience has shown that it will bear shipment to Portland, Me., and that is as far away from New Mexico as one can get in the United States, so it will be seen the whole country is open to us as a market, and that the article can be sold wherever introduced goes without saying, for it sells itself. An asparagus bed of 1 acre will yield, after the third year, about 200 pounds a day for sixty days in the year (which is as long as it is wise to cut it), and this will bring an average price of 10 cents a pound.
>
> Thus, with 1 acre each of sweet potatoes, celery, onions, and asparagus, a man can make a good estimate of the money value of the crop that he will have for market each year. And in addition to this he will need 2 acres in alfalfa, and 2 in corn or oats for his cow and horse, and 2 for house lot, orchard, and kitchen

garden. That makes 10 acres in all, and is as much land as any man needs in this section to farm for profit, while it is as much as the most industrious man can properly cultivate in the crops named. There is an abundance of good land for such purposes to be had in this county at fair prices, and with good facilities for irrigating, such as are now being provided, there will be room here in this line of business for at least a thousand families, convenient to as good a market as there is anywhere in the West.

GALLUP.

The great industry of New Mexico for centuries to come will be mining. The many mountain chains and detached ranges which are found in every part of the Territory are all seamed with mineral-bearing veins. In the mountains of this county there are workable veins of gold, silver, copper, lead, and coal. The principal coal-mining industry of the Territory is carried on at Gallup, in the western part of the county, about 15 miles from the Arizona line. Gallup is a town of about 2,500 people, and is the second town of the county in size and importance. It has good public schools and churches, and an enterprising weekly newspaper, and while strictly a coal-mining town is as orderly a place as will be found in any part of the country, East or West. There has been but little done in the immediate vicinity in the way of agricultural development, by reason of the scarcity of water for irrigation, but the soil is very rich, and wherever it can be cultivated yields abundant crops. The town is situated in the valley of the Rio Puerco of the West, on the Pacific slope, just west of the Continental Divide, and at an altitude of about 6,500 feet above sea level, which gives it a delightful climate, especially in summer. The Zuñi Mountains, a few miles south of the town, contain the most extensive forests of pine timber now to be found in any part of the United States south of Minnesota. The most of this timber is on public land or on land owned by the railroad company, but owing to the distance from any railroad but little of it has yet been utilized.

Gallup is on the Santa Fe Pacific Railway, a division of the main line of the Atchison, Topeka and Santa Fe, and is the principal town on that line between Albuquerque and Los Angeles. It furnishes regular employment in its coal mines to about 600 men, and its annual output exceeds 200,000 tons, or nearly one-third the total coal output of the entire Territory. The bulk of this is delivered to the railway company, and furnishes all the fuel used by the company between the Rio Grande and the Pacific Ocean. The operators here also send large quantities of "commercial" coal to Los Angeles and other southern California points, to Phenix, Tucson, and other places in Arizona, while many thousands of tons come east to Albuquerque, and are sent south into Texas and old Mexico. The coal is a lignite, excellent for steam and domestic purposes, burning without any clinker, and leaving but little ash, though it will not coke, and is not a desirable coal for gas making. There are five known workable veins, one above another, the lowest at a depth of less than 100 feet. The field extends to an unknown distance to the north and west of the town, and is considered practically inexhaustible. The first work in the development of this field was done in 1881, but the industry did not assume important proportions till 1884, so that it can be said to be now about fifteen years old.

This is the only important industry yet developed in the western part of the county. The country is well adapted to grazing purposes, but the most of it is embraced in the reservation of the Navajo Indians, and the flocks of this tribe graze over all the reservation and also the adjoining lands for several miles on either side. The treaty with the Navajos requires them to keep their people and their animals within the limits of their reservation, but this provision has never been enforced.

BLAND.

The town of Bland, in the northeastern part of the county, about 50 miles by the road from Albuquerque, is also a mining town, but the work at this point is confined to mining the precious metals. The town is the center of the famous Cochiti mining country, now well known as one of the most extensive and productive of New Mexico's many mining camps. It is situated in Pino Canon, about 10 miles from the Rio Grande, and is surrounded on all sides by a rich mineral country. It was founded about seven years ago, and has a population estimated at 1,000. The nearest railway point is at Thornton, on the main line of the Atchison, Topeka, and Santa Fe, about 18 miles distant, but a stage line furnishes comfortable transportation for passengers and a daily mail. The same coaches continue up the canyon from Bland, and across the mountain to Sulphur Springs, a well-known health resort, where the waters have been found to possess highly valuable medicinal qualities. The ores of the Cochiti camp are chiefly valuable for their gold. They are usually of low grade, but are of a character that can be worked in the camp. This, taken in connection with the fact that they are found in immense bodies, and are also very evenly mineralized, makes mining at Cochiti profitable and reliable.

In a description of this camp, a writer who recently visited the place says the Washington, Lone Star, and Crown Point mines are in the immediate vicinity of the town of Bland. It is estimated that there are 50,000 tons of ore on the "dump" of the Washington mine at the present time, worth $28 a ton. The property is in litigation at present and is not being worked. The Lone Star has a vein of rich sulphides, varying from 30 to 75 feet in width, and running perpendicularly up the mountain side. This vein has been worked steadily for the last two years, and there is now enough ore "in sight" to keep a mill with a capacity of 100 tons a day running for four years. Lying parallel with this vein, and only a short distance from it, is another which has not yet been touched. It is the intention of the company owning this property to put up during the coming year a mill for the treatment of their ores with a capacity of 350 tons a day. The site has been selected, and arrangements have been made for the construction of the mill. The mill at present in use is small, having a capacity of only 25 tons a day.

The Albemarle property, upon which more work is being done now than upon any other in the district, is only about 3 miles from Bland, but it is in another canyon, and hence the mountain has to be crossed in order to reach it. The road has a grade of 1,500 feet to the mile, but it is the best route than can be found, and over it, up one side of the mountain and down the other, have to be hauled not only all the products of the mine, but all the supplies for the camp. The mine is in a canyon not over 60 feet wide at the bottom, and room was made for the mill by blasting out space in the wall of the chasm, so that the buildings themselves appear to be a part of the mountain. The 250-horsepower engine and all the immense machinery for the mill were transported over the road above mentioned. The present mill has a capacity of 300 tons a day, and another of equal capacity is now in course of construction. The works now give employment to about 450 men, and that number will be nearly doubled when the new mill is completed.

This is the largest mining enterprise in the county, and there is none larger in the Territory, but a good idea can be formed of the extent and richness of the Cochiti mineral field from the fact that there is room for at least a dozen more, of equal capacity, and ore enough to keep them all running full handed for at least a quarter of a century, and probably much longer. A railroad from some point on the Atchison, Topeka and Santa Fe to Bland is much needed, and if such a line were built, so that ores could be shipped out at moderate expense, reduction works sufficient to handle the output of the camp would probably be built along the Rio Grande, where the river would furnish a sufficient water supply, the lack of which is now one of the greatest obstacles in the way of the prosperity of the camp, and where the advantage of water power could also be had. This would greatly facilitate the development of the camp, since the small operators, who are unable to put up mills of their own, would thus be given a market for their ores.

OTHER CAMPS.

There are several other mining camps in the county, though the most of them have so far been unable to send much ore to market, owing to the undeveloped state of their mines. Prominent among these may be mentioned Hell Canyon, Coyote Canyon, Las Placitas, San Isidro, and Copper City. The last two named are copper camps and the others gold and silver. They all have rich leads and lack only development to make them good and profitable metal producers, but it requires a considerable amount of capital to transform a "prospect" into a producing mine, and capital in sufficient amounts to be of value for such purposes is very rarely, if ever, found among prospectors. In some of the camps named, especially Hell Canyon, considerable development has been done, and the work in every case has justified the estimates which the owners put upon the property. In the course of time, when men with money enough to make mines of these claims take hold of them, all the camps referred to will become prosperous mining districts. There is a large copper field at Copper City, and it has been worked some in years past, but it is so far from the railway and the product and supplies have to be hauled so far over a difficult road that operations in the camp can not be carried on with profit, even at the high price of copper now prevailing. At San Isidro some work is now being done, and the prospects are very encouraging. This is much more accessible than the Copper City camp, and it is believed that the ore can be hauled out and shipped at a profit, as it is not more than 25 miles from the line of the railway.

SUMMER RESORTS.

Some of the most delightful and enjoyable summer resorts in the Southwest are in the mountains of this county, and readily accessible from the towns. The Jemez Hot Springs, now well known and popular as a health and pleasure resort, is in the canyon of the Jemez River, twelve hours' ride from Albuquerque by stage, and the Sulphur Springs, to which reference has been made elsewhere, are situated about 10 miles farther up in the same canyon. Both these places are well-known resorts, and their reputation extends beyond the limits of the Territory. They are visited annually by many persons in search of health, and the waters are said to have a very salutary effect in nearly all cases. They are especially valuable to those afflicted with scrofulous disorders or rheumatism, and it frequently happens that rheumatic patients who have to be carried there on their beds appear to be restored to perfect health after a sojourn of a few weeks. These places are also popular pleasure resorts in summer, because the weather is rarely too warm for comfort, and there is excellent hunting and trout fishing.

Camp Whitcomb, in the Sandia Mountains, 17 miles east of Albuquerque, is also a very popular summer resort for people from the city. It is reached by a good road, through a very interesting portion of the country, and the trip can be made from town to the "Camp" with a carriage in about three hours. The place is situated high up on the mountain side in the pine woods, and its convenience to the city, as well as the beautiful scenery, the cool and bracing atmosphere, and the abundance of pure mountain water from numerous large springs, combine to make it a very attractive warm-weather resort, and it is visited by the people from the city in large numbers throughout the season. There are a score of other good natural resorts in the county, but as they are without accommodations for the public, they are visited only by those who can go prepared to "camp out," and most of the older residents of the country prefer this style of entertainment to the hotel or public house; hence, a large number of families in the city spend their summer vacation in camp in some favorite mountain canyon where they can have all the attractions of nature in her wildest moods, and yet be not so far removed from civilization but that the city can be reached in a few hours if necessary.

ALBUQUERQUE.

The county seat of Bernalillo County is Albuquerque, the largest city in the Territory and the commercial center of all that portion of New Mexico south and west of the Glorieta Mountains, embracing about three-fourths of the Territory, and also of the northern half of Arizona. Its merchants cover an undisputed trade area of about 100,000 square miles, or a district larger than the six New England States and the State of New York combined, which give the place a wholesale trade much larger than is done by many Eastern cities of three times its population. The present population of the place is about 12,000, about one-fourth of whom are natives of the Territory, and the remainder immigrants from the "States," coming from nearly all the States of the Union. There is not a more cosmopolitan city in the United States than Albuquerque, and the peculiarly American quality of "get there" is very distinctly in evidence on every hand. The importance of the position which this place occupies with reference to the business affairs of New Mexico and Arizona can be best illustrated by the fact that the United States Post-Office Department has made it the postal headquarters for the Southwest, and the post-office here is the depository for all the offices in both the Territories. The free-delivery system was inaugurated about ten years ago, and mail is delivered twice a day in all parts of the city and once a day in the suburbs. It is also the most important point on the line of the Atchison, Topeka and Santa Fe Railway between Topeka and Los Angeles.

Many Eastern people imagine that in coming "away out to New Mexico" they would put themselves entirely beyond the pale of civilization, and for the benefit of such it may be said that they would find Albuquerque fully abreast with any Eastern city of double its size in everything that goes to make up the modern, progressive, American town—not even excepting those things that might better be left out, but which, like the buzzards, always gather where the carcass is. The town has a fine system of public schools with a large and elegant school building in each ward. There are in addition a number of good private schools, while denominational institutions are maintained by the Methodists, Presbyterians, and Catholics. It is also the seat of the University of New Mexico, established and maintained by the Territory, and endowed by the United States with a liberal donation of public land. The university building is located upon an eminence about 200 feet above the general level of the town, with an unobstructed view for many miles in every direction. With the Sandia Mountains 12 miles east for a background, the view takes in the Jemez Mountains, 60 miles north, the San Mateos, 70 miles west, and the Socorros and Magdalenas, 75 miles south, while with a glass may be seen the Mogollons, more than 125 miles to the southwest. The institution has a first-class faculty and ranks among the best Western colleges. A new building has recently been erected, in which will be established a department that will be unique in its way, being the only one of its kind in the United States, and to be devoted to the study of climatology, with special reference to the effects of climatic conditions in the cure or prevention of disease, particularly diseases of the lungs. Mrs. Alice P. Hadley made the university a donation of $10,000 for this purpose on condition that a like sum would be contributed by the people of the Territory, whereupon the legislature appropriated $5,000 and the people of Albuquerque raised the remainder. The department will be known as "Hadley Hall," in memory of the late Walter C. Hadley.

In the matter of religious advantages the town is very thoroughly equipped. All the leading Christian denominations have societies here, with good, commodious houses of worship in which services are held regularly, and a Jewish society, organized some years ago, is now building a synagogue.

There are commodious places of public entertainment and amusement in which are given lectures, operas, theatrical entertainments, etc., and during the entertainment season the people of the place are never at a loss for "some place to go."

One of the institutions of Albuquerque worthy of special notice is the "Commercial Club." This represents a successful combination of business and social interests, and possesses within the one organization all the principal features of a chamber of commerce and a social club. To the active and effective work of this organization as a general "push committee" is attributed much of the prosperity which has been enjoyed by the town during the last ten years. It is quartered in its own building, erected especially for the purpose at a cost of $75,000, a large and elegant structure of red sandstone, and which is pronounced by visitors as fine a clubhouse as any west of Chicago.

The principal shops of the Atchison, Topeka and Santa Fe Railway west of Topeka are located here and furnish regular employment to some 600 men. These shops are being steadily enlarged, and it is said to be the intention of the company to have all of its work done here for all of that portion of its system west of the western line of Kansas, which will render necessary the employment at this place of about 1,200 men.

There is an excellent system of waterworks, furnishing the purest of water in great abundance, both for domestic use and for lawn irrigation, and at very low rates. Light is furnished by gas works and an electric-light plant, the streets being lighted by electricity.

All the streets are graded, and most of them are paved with a natural cement obtained from the neighboring hills, and laid upon a foundation of cobblestones, making a thoroughfare very firm, smooth, and durable. Excellent sidewalks line all the principal streets of the place, the popular material for this purpose being an artificial stone made of sand and Portland cement upon a foundation of gravel. This makes a walk as hard and smooth as natural stone, and apparently quite as durable.

The manufacturing interests of the town, in addition to the railway works above named, are represented by a foundry and machine shop, which turns out large quantities of work, especially for the many mining camps in various parts of the Territory; a brewery and two ice factories, which ship their products to all parts of Mexico and west to the California line; two flouring mills, two mineral-water establishments, a planing mill, four brickyards, a cigar factory, a broom factory, and many smaller establishments.

There is an excellent opening here for a canning factory, to handle the fruits and vegetables which are grown in great abundance in this vicinity, and a beet-sugar factory.

Nearly all lines of business, commercial, mechanical, and professional, are represented in Albuquerque, and it has, in addition, a considerable population composed of persons not engaged in any active business, who seek the mild, dry atmosphere of this section, especially during the winter season, for health or pleasure.

There are two daily papers in the town, one issued in the morning and the other in the evening; five weekly papers, and one monthly publication, the last named being devoted to the interests of the mining industry. The town also possesses the largest and best free public library in the southwest, which is maintained by a special tax levied by the city council for that purpose.

CHAVES COUNTY.

In point of natural resources from which are rapidly being developed conditions that are soon to support a prosperous, wealthy people, Chaves is the banner county of New Mexico.

As originally organized in 1899 from a portion of the county of Lincoln, it was approximately 100 miles from north to south and 110 miles from east to west. The legislature of 1899 added territory on the southwest about 36 miles square. The greater part of this large area is grazing land, pure and simple, excellent grass lands which sustain thousands of cattle and sheep the year round and which, with the further development of water, which is quite practicable, will sustain even more. A great deal of the range area is held by cattle owners who have title, in many instances, to land on which are found springs and lakes, or on which they have dug or bored wells and put up windmills and, owning these improvements, are able to control, in a manner, the range contiguous. But there are large areas of grass lands on which no water is found during a very dry season, and it is in such localities that the development of water is most important, since without water the range, although covered with the best of feed, is practically well-nigh valueless. To this matter, the finding of a water supply, a great deal of attention is being devoted, at a heavy expense in some cases. Large well-boring machines, worked by gasoline engines, are being used, and the work is being carried on, slowly but surely, by men of means who understand the importance of procuring an adequate supply of water. The open-range stock interests were the original mainstay of the county and continue to be the most important in point of tax-paying ability. But the glory of Chaves County, at least at present, is the magnificent alfalfa farms with their herds of fine cattle—Herefords and Shorthorns—and their flocks of Shropshire sheep. Two large farms, one of 1,000 acres and another comprising 13,000 acres in both alfalfa and natural-grass pastures, are devoted exclusively to the Hereford industry, and have on them as fine animals as could be purchased from some of the leading breeders of registered Herefords in the United States. In fact the owners of these farms have among their fine stock many prominent prize winners. The owner of Sir Bredwell, who paid $5,000 for him, has lately purchased a 500-acre alfalfa farm 2 miles east of Roswell at a cost of $25,000, and will spend thousands of dollars making it a model Hereford home. The two farms referred to above are a surprise and delight to all who see them and the fine stock on them. Chaves County will soon be known as one of the most prominent, successful Hereford breeding grounds in the United States. The pioneers in the industry here are men of ample means who have "set their mark high" and whose dictionary does not contain the word "fail." Their friendly emulation and that of others to follow will result in a few years in placing Chaves County in the front rank of fine whiteface breeding centers. The breeders of Herefords at present are devoting their attention largely to the raising of young bulls. The home demand—the range-cattle owners—has so far taken all that could be raised. Inquiries are being made by large cattle owners from Old Mexico for young bulls with which to improve their herds, and they will be good customers.

Meanwhile the old "standby," the Shorthorn, is not being neglected. There are three herds of 400 to 500 each, two of which are being bred straight, while the other, some 500 Durham cows, are being crossed with Hereford bulls. These herds are also owned by men who are able to breed the best and will do so. The result will be watched with interest.

For the breeding of both Herefords and Shorthorns in the arid region the alfalfa farm is a necessity, and as that wonderful forage crop can not be raised successfully without irrigation Chaves County, with its abundant supply of water, possesses advantages superior to any other portion of the Southwest.

WATER SUPPLY.

The irrigation systems of Chaves County at present obtain their supply of water from three sources:

First. The immense springs in the vicinity of Roswell, fed by subterranean streams of artesian origin. From these five beautiful, limpid streams of water flow, known as the North Berrendo, Middle

Berrendo, South Berrendo, North Spring River, and South Spring River. These streams are the fishing grounds where disciples of Isaak Walton find rare sport catching black bass, which are abundant.

Second. The large number of artesian wells, for which this locality is becoming famous. The first artesian well in this county was drilled in the summer of 1891 and flowed about 10 gallons per minute. The last one, developed in the town of Roswell, was drilled in five days to a depth of 285 feet at a cost of $550 and flows over 2,000 gallons per minute. Of these wells there are now over 100 in the county, and the aggregate flow of water from them is already an important addition to the supply for irrigation, in addition to its use for domestic purposes. A large number of wells are utilized for piping water into dwellings and business houses, the strong pressure making it practicable. A recent successful experiment by a citizen of Roswell has demonstrated the fact that this pressure is ample to operate a small hydraulic ram, costing $20, by which water can be forced into a large tank 30, 40, 50, or more feet above the ground and furnish an abundant supply of water for the second, third, and fourth stories of buildings. The artesian-well development and its uses, including the furnishing of power for machinery, is in its infancy here, notwithstanding the satisfactory results that have already been obtained, and it is confidently believed that further developments, when test wells shall have been drilled to much greater depths, will make present results seem small. The deepest well so far is 950 feet and flows water much softer than any other well known in this region.

Third. The flood waters from the great watershed of the White Mountain region, which extends for nearly 100 miles west of Roswell. The most of this supply goes to waste for want of storage reservoirs, which some day in the near future will be built, and these flood waters will then be used to make productive from 1,000,000 to 1,500,000 acres of rich, fertile land which now produces only grama grass for pasturage. Plans for the building of these reservoirs have been under consideration for some years and need only brains, energy, and capital to carry them into effect and practical operation.

SHEEP AND WOOL.

This important industry has grown remarkably in the past two years owing to the favorable conditions existing, making it highly profitable to flock masters. The number of sheep in the county is estimated by well-informed persons at fully 250,000 head. The reasonable tax rate, ample range, and other favorable conditions have caused owners from other portions of the Territory to move their flocks to Chaves County, and the business has become one of the most important.

ROSWELL.

Roswell, the county seat of Chaves County, has a population of 2,500, which is steadily increasing; excellent graded schools, superior to those of many a larger, older town in the States; the New Mexico Military Institute, fully mentioned herein, an ice factory, telephone system, one bank, prosperous churches, a flourishing commercial club of 65 members, and nearly all lines of business, represented by live, energetic men. As these lines are written, the board of town trustees have just received the report of an expert on the estimated cost of a sewerage system for the town, amounting to $27,000, a 20-acre farm for the proper disposition of the sewage having been donated for that purpose by a progressive, nonresident property owner of large means. An election for the purpose of voting bonds will be called, and will without doubt carry. An electric-light plant is under careful consideration and will be installed in the near future. Ten miles of streets are graded, many of them being shaded by handsome trees, and various public improvements are being projected for early consummation. The inhabitants of the town include people from every State and Territory in the Union, and are intelligent, wide-awake, and progressive. Plans for the establishment of a female college are maturing and promise to meet with substantial encouragement, amply sufficient to insure its success.

From January 1 to September 1, 1899 (eight months), the buildings completed and in course of construction in the town amount to $115,000.

FRUITS.

The fruits raised in the Pecos Valley are the admiration and delight of all who see and taste them, particularly the apples and pears. When orchardists learn to plant peaches only on high ground, better results will be obtained, as it is noticed that those so situated bear without fail. Grapes and cherries have been neglected, but both are raised to some extent and of the finest flavor, particularly the former. Chaves County fruit takes first premium wherever exhibited. Apples, pears, and plums are especially fine. Experts agree that the apples raised here have no superior anywhere in the United States for size, color, symmetry, and flavor. Their natural high polish and their perfect condition make them ready sellers in every market. The absence of all pests common to apple orchards makes the lot of the orchardist here a happy one, compared with other localities where the principal part of his labor is the carrying on of an unequal fight with insects that defy all efforts to cope with them successfully. These facts make apple raising in Chaves County take rank next to the live-stock business in importance. One orchard of 500 acres is now coming into bearing and another of 250 acres is being set out. There are a number of older orchards which have been bearing for years, furnishing the product which has given the county its well-deserved reputation as a fine fruit region.

CLIMATE.

To those who have taken the pains to make intelligent inquiry, the remarkable climate of the Pecos Valley and its beneficial effect upon persons troubled with diseases of the throat or lungs, in particular, is almost too well known to call for any extended mention. The dry, pure air, the bright sunshine during the greater part of the year, the excellent chances for hunting and fishing and other diversions, make Roswell a desirable place for those who need such a climate. The great need has been a sanitarium, properly arranged, with modern conveniences, and conducted according to the best rules of practice laid down by acknowledged expert authorities who have acquired practical experience in the successful management of such institutions. This want is now to be supplied. One of the finest blocks in the town, 350 by 421 feet, beautifully situated, has just been purchased by a physician who has unlimited means at his command. He will erect a fine building with a group of cottages in connection, improve the grounds, and make the property one of the finest and most attractive in the Southwest.

RAILROADS.

The extension of the Pecos Valley and Northeastern Railway from Roswell to Amarillo, Tex., 220 miles northeast, was completed February 15, 1899, giving direct connection with Kansas City, Chicago, St. Louis, and Denver, and to this is due very largely the increase of population and investment of capital in the town and county. The machine shops, roundhouse, and the general offices are located at Roswell, and thousands of dollars are being spent by the company in improvements here, a $10,000 building for the general offices being in course of construction at this time. When the improvements shall have been completed and a full force at work in all departments, which will be soon, the pay roll will aggregate $5,000 or more each month. Roswell is the central point on the line which, together with the superior quality of the water here and the abundant supply, and the fact that the principal stockholders in the company own valuable lands close to the town, are significant reasons for centralizing the railroad company's operating forces at this point.

From February 15 to July 1, 1899, the wool shipments from Roswell reached very close to 1,000,000 pounds, while 300 cars of cattle were shipped from this point in the same time. The shipments this fall will also be very large, adding heavily to the above figures. The Pecos Valley and Northeastern will in all probability be extended soon from Pecos to Boquillas, Tex., where it will connect with the road being built from central Mexico, thus adding very greatly to the traffic of the road and to its importance. Of more importance to Roswell is the proposed line west to the coal fields and gold and silver mines of Lincoln County, to a junction with the El Paso and Northeastern Railway, and on west to some point on the Atchison, Topeka and Santa Fe line, affording a market for the alfalfa, fruits, and vegetables raised here, and making it possible to secure a supply of coal and wood at lower figures than at present.

STOCK INDUSTRY.

The stock industry is the principal industry of the county of Chaves, and has grown rapidly during the past year. The assessed valuation of the cattle in the county of Chaves for the year 1900 is $1,000,000, while the actual valuation is $4,000,000.

One hundred thousand sheep have been permanently located within the boundaries of Chaves County during the last two months in addition to 150,000 already returned for taxation. We probably have considerably over 250,000 sheep now, and will sell right here in Roswell 1,500,000 pounds of wool next spring. The high price of beef cattle and sheep has added wonderfully to the income of Chaves County, and is on the increase all the time.

THE ADDITION OF THE LOWER PENASCO COUNTRY.

This addition gives Chaves thirty-six townships, rich in grazing and agricultural lands, and containing a particularly solvent community of about 500 souls, among whom last year there was not $500 in delinquent taxes. This section is naturally tributary to Roswell, and will be of great benefit to Chaves County as a paying business adjunct.

PORTALES.

The new town and post-office of Portales is located on the Pecos Valley and Northeastern Railroad. It is located in a splendid grazing country where water is easily obtained and in large quantities; is surrounded by large cattle ranches, and promises to become a large cattle shipping point. It now has a progressive population of about 250, two good-sized general stores, a lumber yard, etc., a $3,000 schoolhouse is in process of erection, and a thriving community is promised. During the year a post-office has been established at South Spring, 5 miles south of Roswell, and at Glen, 40 miles north, besides the one at Portales, already mentioned. Chaves County also absorbed two offices in addition to the country belonging to the Lower Penasco and Elk.

POPULATION OF CHAVES COUNTY.

The county now contains about 5,000 people and is daily receiving additions. By the time the next census is taken in June it will doubtless have many more inhabitants. This is a rapid increase and is an increase which is decidedly permanent. The new people are almost all people of means and intelligence, and are of great advantage to us socially and financially.

The New Mexico Military Institute, which is fully described as to purpose, etc., in another part of this report, will bring many people to Roswell, the county seat of Chaves County, as it has already done, for the purpose of educating their children and having them receive advantages equal to those to be obtained in the East.

COLFAX COUNTY.

Colfax County, situate in the northeastern part of New Mexico immediately south of the Colorado line, is 72 miles long from east to west and 54 miles wide. It contains 2,488,320 acres, more than one-half of which is included within the boundaries of the Maxwell land grant, title to which was confirmed in 1886. During the fiscal year ending June 30, 1899, large tracts of land amounting to 200,000 acres have been sold by the grant company to individual ranchmen, farmers, and minor corporations. The land within the grant is mostly mountainous, containing large tracts of valuable timber, coal, gold, iron, and copper. The remaining land in the county is mostly undulating prairie, resembling very much the one-time prairie land of the Mississippi Valley, with a gradual slope northwest to southeast. During the past year more than one hundred families have settled on this public domain, and with their predecessors are becoming thrifty farmers and ranchmen. A large portion of the land still remains the property of the Government. The soil is rich, and a great portion of it can be irrigated from the waters of the Red, Vermejo, Cimmaron, and Rayado rivers, and many smaller streams. The altitude varies from 5,600 feet in the southeastern portion to 7,000 feet at the foothills, arising to 13,000 feet on the western boundary, which is the highest point of the Sangre de Cristo Range. The northern portion is bounded by the Raton Range of mountains, being a spur or offshoot from one of the main ranges of the Rockies. The mountains on the north and west offer a natural protection from the snowstorms and blizzards, as well as from high winds. The average mean temperature is 50° F. near the foothills, the coldest being 32° and the warmest 72°. The atmosphere is dry and no great extremes of heat or cold exist. The average rainfall is 14 to 19 inches at this altitude, but the rainfall in the mountains runs as high as 30 inches. During the winter the canyons in the mountains are filled with snow, which gradually melts during the spring and summer, furnishing a sufficient supply of water for need of irrigation.

The population of Colfax County is about 14,000, and though coming from various States of the Union, different parts of Europe and Mexico, together with the native population who remained there at the time New Mexico became part of the United States, and engaged in various pursuits of life, are yet as homogeneous a class of people as are found anywhere between the Atlantic and Pacific oceans, and are industrious, thrifty, and progressive.

In the northeastern portion of the county are the Johnson and Barela mesas, which have sufficient rainfall for all farming purposes without irrigation. On these two mesas alone nearly 40,000 acres of land are now under cultivation.

The mountain streams abound in trout, and there are still many deer, bears, turkeys, grouse, and other game to be found in the mountains.

RAILROADS.

There are two railroads within the county, the Atchison, Topeka and Santa Fe running from north to south a little east of the center, and a branch of the Colorado and Southern extending into the mountain district on the northwest corner.

CITIES.

The principal cities, towns, and villages are Raton, Gardner, Blossburg, Springer, Elizabethtown, Cimmaron, Maxwell City, and Catskill, all, with the exception of Cimmaron and Elizabethtown, being on the line of railroads, and are doing a good, thriving business.

Raton has a population of 3,800. The Atchison, Topeka and Santa Fe Railroad Company has its second largest machine shops at this point, and employs a large number of machinists. A splendid waterworks system, electric-light plant, and many costly and modern buildings have been erected recently.

Gardner is the headquarters of the Raton Coal and Coke Company, whose output of coal is from 60 to 70 cars per day, and has 76 coke ovens in operation. The coal is mined mostly by the use of electric machines. Here, also, you find a waterwork system and an electric-light plant.

Blossburg, lying within 1 mile of Gardner, was formerly the headquarters of this coal company, and considerable business is still done at this point.

Springer and Maxwell City each have good waterworks systems, and in the vicinity of each 20,000 to 30,000 acres of land has been placed under irrigation and farming has been making rapid strides at these points. At Maxwell City a modern flouring mill handles the wheat raised in the county.

Cimmaron and Elizabethtown are the two principal mining towns in the county. The latter during the past year has been making rapid strides in population and in the development of the mines surrounding it. Nearly all the mineral in the county lies within the confines of the Maxwell land-grant boundaries, but as this company offers the same inducement to prospectors and locaters as does the Government the mines are becoming rapidly developed and much mineral is now being shipped therefrom.

MINES.

The principal paying mines in the county are the Aztec, Black Horse, Montezuma, Red Bandana, Legal Tender, and Black Copper, the former having produced more than $1,000,000. Nearly all of these properties are now being worked on a paying basis. Within the past year two modern and up-to-date mills have been put into operation, one of which is a custom mill handling 40 to 60 tons per day.

Much placer mining is being done in the Ute Creek and the Moreno Valley, situate on either side of Baldy Mountain, also near Cimmaron and Bonita and Uracca canyons. Recent developments have shown that both quartz and placer mining may be carried on at a profit. It is but 25 to 50 miles from all of these mines to the line of the Atchison, Topeka and Santa Fe Railroad Company, and considerable ore is shipped to the smelters at Pueblo and Denver.

PETROLEUM.

Within the past year petroleum has been found in large quantities in the northeastern part of the county, and machinery is now being put in place for the purpose of extracting the same for market use.

LUMBER.

In the vicinity of Catskill seven sawmills are kept constantly at work and several hundred thousand feet of lumber are sawed daily, cut from the finest cedar, pine, and spruce timber.

CATTLE.

About 70,000 head of cattle are grazed within the boundaries of this county, contained in large pastures, one of which covers an area of 120,000 acres, recently purchased from the Maxwell Land Grant Company. The protection offered by the mountains on the west and east, and the dry, crisp atmosphere which cures the native grass when matured, does away with the necessity of cattle feed in the winter.

SHEEP.

One hundred thousand head of sheep are grazed on the plains both winter and summer without shelter, and seldom do their owners sustain loss by the storms of winter.

FARMING.

Considerable farming is carried on in the mountain valleys, where wheat, oats, rye, barley, and all vegetables known to the Mississippi Valley are raised in large quantities, unsurpassed in quality, and with but little cultivation. Alfalfa is the principal domestic grass, producing three cuttings each year.

Corn is grown in small quantities only, the summer nights being so cool as to prevent its maturing.

FRUIT RAISING.

Nearly all kinds of fruit grown in the temperate zone are raised at a profit, apples, pears, plums, cherries, apricots, and nectarines growing in abundance, yielding their producers larger returns than anywhere in the East. All small fruits grow with but little cultivation. The flavor of New Mexico fruit has become widely known, and that grown in Colfax County may be considered a fair average. The trees are free from blight, and the fruit grower has never had to contend with any insects which destroy the profit of the fruit grown in the East.

CEMENT.

Near the town of Springer are several stratums of cement rock, from which the Springer Cement Company produces an excellent quality of hydraulic cement and cement brick for building purposes.

ARTESIAN WATER.

Six miles southeast of Springer two artesian wells have been flowing during the past eight years. The water therefrom is bottled and shipped to distant towns and cities for medical purposes. Chemists have declared it to be the best known mineral water for dyspepsia and kidney ailments. These wells are from 150 to 200 feet deep and produce a 6-inch flow, irrigating large tracts of land.

The small expense in sinking artesian wells offers a splendid opportunity for farmers of small means who desire to farm by irrigation.

DAIRY FARMING.

Three miles east of Raton, on the Sugarite Creek, is the largest dairy farm in the county, containing 20,000 acres of land. A butter and cheese factory produces large quantities of these necessaries, which are marketed in Raton and immediate towns.

EDUCATION.

Within the county are thirty-nine school districts in which school is taught from three to ten months in each year, thus guaranteeing to every child reared within the confines of the county an opportunity for at least a good common-school education. At Raton our teachers are employed ten months in each year. Good salaries are paid, thus securing able educators, who gradually lead the mind from the lower branches to the scientific, and also teach some of the classics and modern languages. Two school buildings have heretofore been used, one containing eight rooms; but the school board during the last year, seeing the necessity of more school room, ordered a new building at an expense of $15,000, which is now in course of construction.

The teachers' institute is held at Raton, the county seat, for a period of two weeks during the latter part of August. Experienced and highly-paid educators are in attendance, thus guaranteeing to each teacher in the county an opportunity to keep in the lead with the onward march of education and general progress in the schoolroom. Each school district in the county has a splendid and commodious school building.

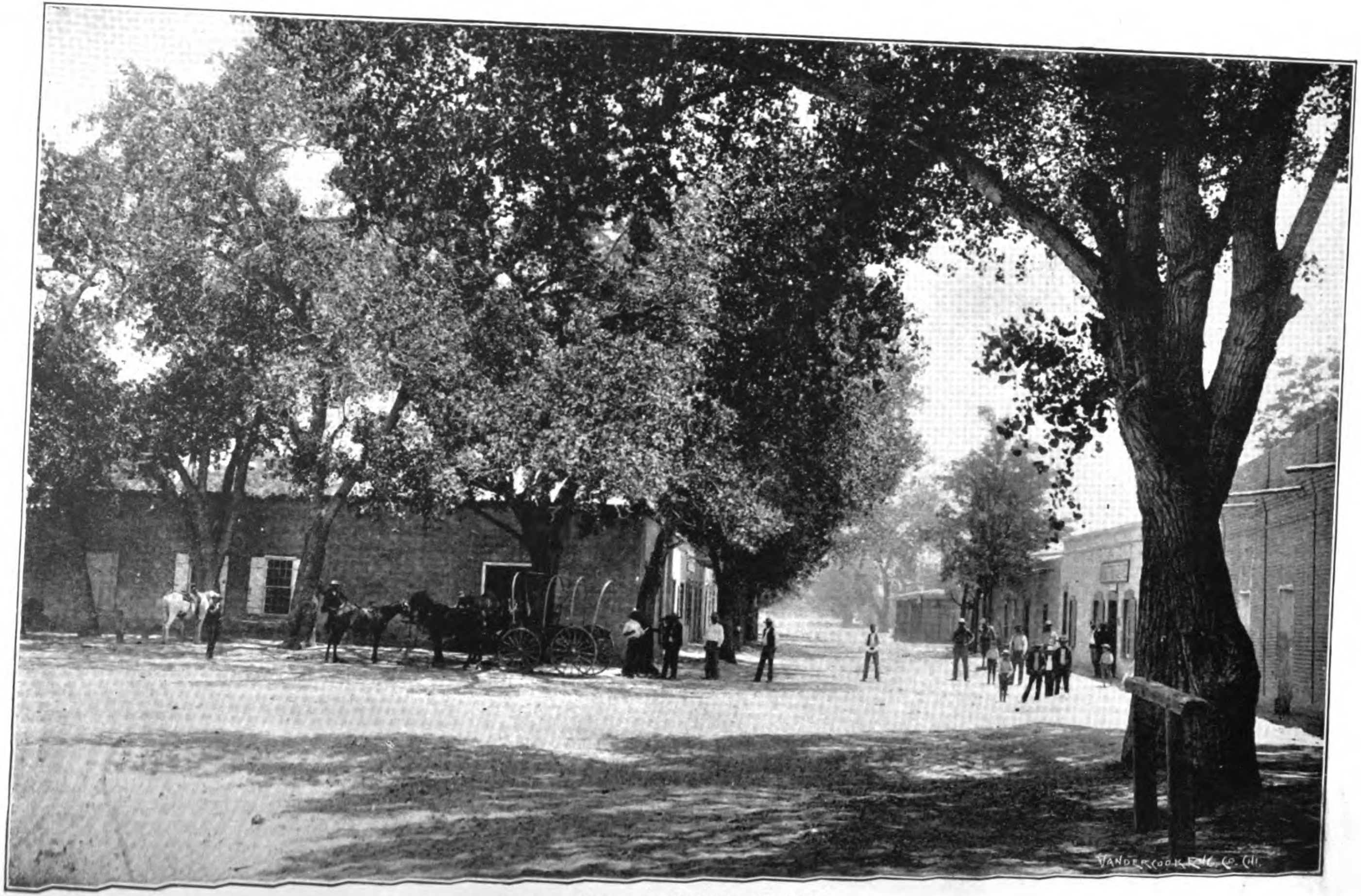
PLUMBAGO.

Seven miles southeast of Raton several plumbago mines have recently been opened up and are now being developed. Several miners are employed, and the plumbago is shipped to Chicago, the headquarters of the company operating the mines, where the crude material is rapidly transferred to the marketable, which is found to be equal to any of that used in the lead pencils of to-day.

DONA ANA COUNTY.

Dona Ana County is situated in the southern part of the Territory of New Mexico, between the thirty-second and thirty-third degrees of latitude and the twenty-ninth and thirtieth degrees of longitude west from Washington.

The resources of this county are mainly agricultural. It is watered by the Rio Grande, which enters Dona Ana County in its northwestern part, and flows in a southeasterly direction through the county for a distance of 100 miles. The valley of the Rio Grande in this county is on an average about 7 miles wide. Part of said valley around Las Cruces (the county seat of said county) is known as the Mesilla Valley, far famed and favorably known for its production of wheat, indian corn, alfalfa, and fine fruits, especially peaches, pears, apples, plums, and grapes, and all kinds of berries, such as strawberries, gooseberries,



STREET SCENE IN MESILLA, N. MEX.

etc. Among the many varieties, one of the best known is the mission grape, the best-flavored grape for table use known in the civilized world. This grape was introduced into Mexico, New Mexico, and California in the eighteenth century by the pioneers of civilization, the Franciscan fathers, who were early missionaries of this country. Therefore the name "mission grape."

All the agricultural lands have to be irrigated in this arid region. The irrigation is entirely dependent on the supply of water from the Rio Grande, and owing to the canals in the northern part of this Territory and Colorado the flow of water in said river is at the present time not sufficient to irrigate said lands, or any portion thereof, successfully during the year; and until a system of storage reservoirs and canals is inaugurated the present state of affairs will continue. In all probability the Elephant Butte reservoirs and canals will be built in the near future—as soon as their legal status has been decided by the courts—and said canals will be able to furnish water to all the lands subject to irrigation in Dona Ana County.

The soil of the Rio Grande Valley is a rich alluvial soil, consisting of the decomposed matter of trees, leaves, limestone, etc., which has been carried as sediment down the Rio Grande and left in the valley by its overflows, which have occurred periodically during the past centuries.

At the present time there are irrigated and cultivated about 32,000 acres in the valley, while there are 35,000 acres more susceptible to irrigation, provided a proper canal system is established, as above stated.

Of the 35,000 acres of land now lying idle, there are about 27,000 acres situated on grants, and the remaining 8,000 acres are vacant United States Government land, subject to the homestead and desert-land entry acts.

Dona Ana County has also about 3,000,000 acres of mountain and table lands which are used for grazing purposes, and furnish grass for horses, cattle, and sheep from one year to the other. In a few years to come, as soon as plenty of water to irrigate with has been obtained, the Rio Grande Valley in Dona Ana County will be the farmers' paradise, as, on account of the climatic conditions existing, the altitude of the valley being on an average of 3,900 feet, the farmer can work all the year round, having very near perpetual sunshine, an even climate, not too cold nor too hot, no snow nor blizzards.

ALFALFA.

This is conceded everywhere to be one of the greatest wealth producers. In this valley it is almost an universal crop. Every farmer grows more or less of it. Without exception as to years, on the 10th of May the first cutting is being harvested, and it is the expectation that three more cuttings will follow, at intervals of about five weeks. But because the citizens have been prohibited from storing the great surplus of water that flows down the Rio Grande at a season when it is not needed, the number of cuttings is sometimes reduced to two. Some farmers are growing alfalfa for market on quite a large scale. One farmer usually sells about 700 tons, besides feeding a large amount to stock. Several others do about the same, but the actual statistics are not at hand. On account of the superior grade of cured alfalfa produced here, it brings a higher price in market than that produced in many other places.

WHEAT.

Perhaps there is no other spot in the United States where wheat of the very highest grade is more certainly produced than in this valley.

It knows no enemies or pests of any kind, no rust, no chinch bug, nor anything else to interfere with its growth and maturity. While it is not raised on a large scale by anyone, it is so universally grown by all farmers, large and small, for home consumption, that four flouring mills are sustained in the valley.

INDIAN CORN.

This valuable cereal grows to perfection. It is no exaggeration to say that, both for quality and quantity per acre, this valley will rival the Missouri and Wabash bottoms. Under favorable circumstances a crop of corn can be grown from the same land from which the crop of wheat has been grown in the same year.

FRUITS.

Nearly all deciduous fruits grow well, and some of them do better than in almost any other place. Among these may be named peaches, which in the Mesilla Valley are equal to the finest to be found in any part of the world, both as to size and flavor. During this season (1899) when the peach crop has been a failure in many parts of the United States, here it has been large. From one orchard over 7 full carloads of early peaches were shipped, besides the large amounts sold at retail and in smaller quantities. Apples, pears, quinces, plums, and prunes are grown in the greatest abundance and are of most excellent quality. The codling moth here, as elsewhere, is giving the apple grower some trouble, but it is hoped that some means will be found to overcome its ravages.

GRAPES.

The summer climate here seems to have a peculiar value in converting the starch of fruits into sugar. For this reason the grapes grown in this valley are thought to possess a richness of flavor seldom found in any others. Many varieties are grown, but the Mission, the Muscat, and the seedless are leading varieties for shipping purposes.

VEGETABLES.

Vegetables of nearly all kinds, except Irish potatoes, do well, and are grown in abundance for home consumption and for shipping. Cantaloupes and watermelons are exceedingly fine and delicious. Particular notice may be made of the tomato. The raising and canning of tomatoes has become quite an industry, and the product of the Mesilla Valley canning factory brings in open market a price much higher than those produced elsewhere. Mr. Theodore Roualt is growing the present season about 300 acres of tomatoes, and expects to can and ship about 30,000 cases of same and 6,000 cases of canned green chile.

There is but one thing in the way of making this valley a "farmers' paradise"—our inability to store the waste waters of the Rio Grande.

LABOR SUPPLY.

Owing to the proximity of this county to the border of Mexico, the supply of common laborers is fully equal to the demand. Skilled artisans command fair wages, especially carpenters. During the past year or so miners have been in demand, at customary wages, and the prospects are that increasing numbers will be employed as the new mines are opened up.

PUBLIC BUILDINGS.

Las Cruces, the county seat of Dona Ana County, possesses a very pretty and commodious brick court-house, finished with stone, surrounded by beautiful grounds; a large brick schoolhouse, a large hall, and an academy conducted by the order of the Sisters of Loretto. Union Park is situated just diagonally across the street from the court-house grounds; this park has a large pavilion in the center. It is most beautifully laid out and planted with trees and flowers, which line broad avenues, and was an inception of the "Woman's Improvement Association," a club composed of the foremost ladies of the town.

The following religious denominations have church edifices here: Catholic, Methodist Episcopal, Methodist Episcopal South, Methodist mission, Presbyterian mission, and Presbyterian. About 2 miles south of Las Cruces, at Mesilla Park, are located the buildings and grounds of the New Mexico College of Agriculture and Mechanic Arts. The main building is a fine structure of two stories and a basement, consisting of thirteen rooms. Science Hall, a large two-story brick building, contains eleven large recitation rooms and five smaller ones. There is also an engineering building, girls' dormitory, seed house, and a large greenhouse, and numerous auxiliary buildings.

The college farm contains about 250 acres, all in cultivation, one-half being river-bottom lands.

SOCIAL AND INDUSTRIAL PROGRESS.

It is essential to the highest development of any community that its members have a common language. The older generation of the native people of this county, as in all other counties of the Territory, have been born under another Government, with another language, and can not be expected to speak English. However, it is an encouraging fact that by far the larger portion of our younger native-born citizens speak more or less English, and it is a further noticeable fact and truth that each succeeding generation commands a freer use of the English language.

The native people who formerly used primitive implements in their agricultural pursuits are rapidly adapting themselves to better and more modern methods.

MINES AND MINING.

In the southeast corner of New Mexico is situated the Organ Mountains. If this mineral formation was in Colorado, Montana, Idaho, or any of the Western States in which active mining and prospecting is carried on there would be to-day 5,000 men at work. Commencing at the Modoc mine, on the extreme south end of this formation, minerals in good paying quantities have been found at intervals that have extended as far as the great copper deposits of the San Andreas, 70 miles to the north. The contact of lime and granite is without a break the entire distance. The Modoc mine has been developed to a depth of 160 feet by a shaft. . The ore has increased in value and worth with every foot sunk. At the bottom this vein is 15 feet wide, and 30 per cent lead ore. With lead at the present price this would be a very valuable mine if situated in Colorado. The Bennett-Stevenson mine on the same contact, about 6 miles to the north, has been a large producer since the early sixties. The production for the year 1898 (mining what had been left behind) was in excess of $40,000. No work has been done on this mine below the water level. About 2 miles farther north the Torpedo mine is producing a carload per week of 20 per cent copper ore, the work of two miners. The Memphis, adjoining the Torpedo, has been a great producer of copper and high-grade silver ore. At present this mine is only operated to furnish water for the Bennett mill. Still, on the same contact extending to the north is the Jay Gould mine, shipping high-grade ore, copper and silver. The Merrimac, Little Buck (that produced $35,000 in silver in a few days), the Edison, Brown and Haffore, McLaughlin, Thompson, and Roualt, and other propositions all show veins of lead, copper, and silver in paying quantities when the right people come along and take hold of them. The Bear Canyon mines of Messrs. Bennett & Friedenbloom will some day be immense producers of lead and silver. At the head of St. Nicholas Canyon are found the finest indications of the existence of lead and silver ores yet to be found. The great San Andreas copper deposits are now shipping high-grade copper ores to El Paso. The Atchison, Topeka and Santa Fe Railroad contemplate putting in good roads to these mines to secure the freighting of the ores. This is truly a wonderful contact, but it needs new blood, with energy and capital. It will then give employment to thousands and add vast wealth to the Territory.

CLIMATE.

Dona Ana County, in common with the other sections of New Mexico, can lay claim to a health-giving climate; but apart from the generally favorable reputation of the Territory, as a whole, this county, embracing as it does the famous Mesilla Valley, has advantages from a climatic and public-health standpoint which are unparalleled. That modern scourge, typhoid fever, is very little known in this region, and the ordinary zymotic diseases are only occasionally seen. Among the native population tuberculosis is almost unknown, though of late years several isolated cases have come under the writer's notice.

The excellence of the health of school children is very noticeable, and is well attested by the records of attendance. As a location for the rearing of children where they may escape the various illnesses to which their age predisposes, Dona Ana County can have no superior.

The climatic advantages of this section are manifold, as will be readily understood from the following condensation of the United States Experimental Station reports: During the last five years the average number of sunshiny days has been three hundred and forty-eight; the relative humidity during the winter months being 34. This maximum amount of sunshine and unprecedented atmospheric dryness, combined with the pure air which our mountain situation affords and the equability of temperature which our moderate altitude insures, makes the Mesilla Valley, the "pride of the county," an ideal health resort. In fact, it is nature's great sanitarium. These wonderful climatic conditions have been taken advantage of in the establishment of numerous resorts for the care of patients with incipient pulmonary diseases. At the present writing a sanitarium is under construction at Las Cruces which will be a model of its kind. The purpose of the company is to erect a large main building, 42 by 100 feet, two stories high, containing twenty-two great rooms, library, dining rooms, and smoking rooms; the whole to be surrounded by large verandas, with a southern exposure. Within easy access are to be erected several single-story cottages, after the style of the Saranac Lake Sanitarium. It is hoped in time to make the main building an administrative building and all invalids to be housed in the adjacent cottages, following in the lines of other institutions of similar purpose. There is under consideration two more institutions of this character.

It has given much pleasure to the writer to see this part of New Mexico attract such attention from the medical profession. At the last two meetings of the American Medical Association, held respectively at Denver, Colo., and Columbus, Ohio, the writer presented papers dealing with the climatic therapeutics of southern New Mexico, and it was very gratifying indeed to note the general favor in which they were received.

That Dona Ana County has a bright future before it nobody will deny, for it possesses many of the requisites for securing such, not the least of which is its wonderful climate, attracting as it does the best class of citizens from all parts of the universe.

THE ELEPHANT BUTTES DAM.

The greatest setback this section has ever had was that resulting from the stopping of work on what is familiarly known as the Elephant Buttes dam. A brief history follows:

A company known as the Rio Grande Irrigation and Land Company, Limited, of London, acquired the rights of the Rio Grande Dam and Irrigation Company. The object of this company was to store the overflow waters and irrigate the Rio Grande Valley in the southern part of this Territory. Of this overflow water there is an immense quantity that goes to waste every year, as there are no dams on the Rio Grande to store these waters.

The general plan of this company was to construct a mammoth dam at the Elephant Buttes, near Engle, N. Mex., and form at this point the largest storage reservoir in the world. In addition to the large dam, a series of smaller ones were to be constructed, together with canals, and by this means bring under irrigation and cultivation hundreds of thousands of acres of the most fertile land on the continent.

Work on the smaller dams and canals was commenced in November, 1896, and continued until the spring of 1897, upward of $90,000 having been expended. At this point the United States brought suit to enjoin the company from building the storage dam. Work had to be stopped, and that already done was left in such a condition as to be subjected to great damage by the annual floods. The ground for seeking the injunction was that the Rio Grande was a navigable stream.

This claim is preposterous. The Rio Grande is not and never has been a navigable stream, except where it is affected by the tide. The true secret of the attack can be found in the effort of certain persons to have constructed at El Paso an international dam, and under the impression that the Elephant Buttes dam would interfere with their plans and monopolize the water, they oppose the enterprise. A careful investigation goes to show that, instead of the Elephant Buttes dam monopolizing all the water, the reverse would be the result, and the people at and near El Paso would have more water after its construction than before.

It is to be hoped that this question will shortly be settled, and the company permitted to resume operations, for with the completion of this work will blossom forth one of the richest agricultural, fruit, and dairy sections in the West. It will outrival California, and supply the East with a superior and better quality of fruits and vegetables than can be produced in any other section of America.

EDDY COUNTY.

The county of Eddy is fast demonstrating the fact that it contains within its boundaries all the possibilities for making it one of the greatest agricultural centers in the Southwest. That its vast irrigation system has had much to do with its present prosperity and the brilliant future that is now at its very doors, there is no manner of doubt. It was only when that system was first inaugurated that the growth of the Pecos Valley really began, and it may truthfully be said that since that time the growth of the various industries in Eddy County has been phenomenal. It might be imagined that the one great interest that takes precedence over all others in this Western country, namely, that of cattle raising, could not be affected by irrigation. Nothing could be farther from the truth. Irrigation has brought cattle into the country by the thousand. It has concentrated the interests of their owners in their establishment of one of the largest shipping points in the Southwest at Carlsbad; it has been instrumental in making the town not only their headquarters, but also the home of many of them.

As to the live-stock industry in the county, it is estimated that during the past year it has been increased just one-third—that is to say, that the value, as well as the number of the herds and flocks, has appreciated one-third over the estimates made last year. The Pecos Valley and Northeastern Railway, the extension of which was opened for business between Roswell and Amarillo on the 24th of February last, report that during the spring they transported over their line from all points over 130,000 head of cattle. Of this immense shipment it is safe to say that at the least three-fifths originated at Carlsbad or in the territory tributary to it. Not only did the county show progress made by the number of cattle shipped, but a more valuable feature by far was made apparent—that the grade of the stock was equal, if not generally superior, to that of stock shipped from older communities south of here. This is explained by the fact that the cattlemen of the valley, having been generally successful during the past two years, have invested a large portion of their profits in the purchase of a higher breed of cattle than those of other districts. Proportionately as much fancy stock has come into Eddy County during the year as into any cattle county of Texas. Herefords are, and apparently always will be, the favorite here, and after them comes the Durham as a close second. A very conservative estimate of the number of cattle on the ranges of the county, or immediately adjoining it on the east, places the number at close to 500,000 head, in herds going from 1,000 to 60,000. When it is said that the owners of this vast number of food animals are actively breeding them up to a standard of excellence that will gain for them the very highest prices paid in the great cattle centers for choice beeves, some idea of the progress made in this one great industry alone may be arrived at.

As to the sheep industry of the county there is no doubt but that it has been nearly or quite doubled during the past year. The constantly advancing price paid for wool, the active demand from Kansas City and Chicago for alfalfa-fed lambs have had much to do with this, especially when the exceptionally fine feed for flocks is considered, and one other matter that is a powerful incentive to sheep men to bring their sheep this way, and that is the fact that so far as known this section is the only one in the entire West where there is no friction of any sort between the cattle raiser and the sheep man. The following item, taken from the American Sheep Breeder, of Chicago, sets forth in most unmistakable language reasons why southeastern New Mexico is shortly destined to become one of the greatest sheep-raising centers of America:

> The importance of the sheep-breeding industry on the Pecos River is gradually but steadily increasing. South of here, on the Rio Grande—the great dividing line between the United States and Mexico, a muddy creek, dry for most of the year, and which cost the United States $13,000,000 in 1847 to establish as a national

boundary line—there is to-day probably more sheep than in any other section of the United States of anything like the same area. From the proximity of this district to Mexico, and the facility with which sheep can be brought in from Mexico and the import duty evaded, it is very unlikely that the flocks there will ever be remarkable for anything but numbers, for although the "Dons" across the river have, for the past two or three years, been breeding up their cattle, the shipment of a well-bred lamb into the Republic is of anything but frequent occurrence. Mexican sheep to-day are practically what they were twenty years ago, or fifty, for that matter—straddling, rawboned animals, built for speed rather than for mutton. The appearance of a flock would suggest to one that it would take a dozen generations of careful breeding to bring them up to anything like the standard of the most ordinary animal seen on northern pastures.

Now this vast region, extending along the river for upward of 300 miles, and embracing within its area some six or eight of the largest counties of Texas, is virtually given up to sheep. Native and foreigner alike look for a living from their flocks, and the cattleman is decidedly in the minority. Notwithstanding all this, this district is not sought by progressive sheep men who raise sheep for mutton as well as for wool, and these men are gradually moving their flocks northward up the Pecos River into New Mexico. The advantages they derive from leaving the Rio Grande country are twofold: First, they lessen the danger of their flocks becoming mingled with the poorly bred Mexican animal, and so losing a year's labor and the expense they have been to in an effort to breed up their sheep; and next, from the fact that wild animals of the depredating sort are as plentiful on the Rio Grande now, or nearly so, as they were ten or twenty years ago. This is not to be wondered at, as sheep men are not nearly as apt to form clubs and pay scalp bounties to protect a sheep worth $1 to $1.25 as they would be if the same sheep was worth $2.50 to $3.50. Some of the stories of the depredations of coyotes, lobo wolves, panthers, and mountain lions among the flocks almost surpass belief. Whether altogether true, or only partly so, it is certain that the losses there from this source are greater than a man with a flock of even passably well-bred sheep could afford to stand. For this reason as much as for the one first named, the Pecos country is slowly filling up with a class of sheep men who mean to make the most out of their animals in a practical and businesslike way, and that, of course, means "breeding up" to a standard that makes mutton that will bring money in a market like Chicago. As a matter of fact, there are many sheep raisers, or rather woolgrowers, in northern Mexico or in extreme southern Texas, whose flocks are so particularly poor in blood that if a carload of them should be unloaded at the Union Yards in Chicago they would excite as much curiosity as so many coyotes would, and whose ultimate destination would be the soap factory. The Pecos Valley hopes in time to breed up its flocks as well as its herds, and the time is not far distant when a steer or lamb fattened on the Pecos River will carry with it a reputation similar to that which a Scotch turnip-fed steer or a Southdown commands on the London market.

The cultivation of the alfalfa clover and its prolific yield was the first product that drew attention to Eddy County. It, in fact, made it famous. The wonderful fertility of the soil, as evidenced by this one product, was so pronounced that even the attention of the Department of Agriculture was directed to the valley, and for three months of the present year this Department maintained two of its experts from its division of soils—Messrs. Means and Gardner—in this locality making exhaustive and critical tests of the different strata and noting the different products that appeared to thrive best in the various localities. Later in the summer the Department dispatched two others, attachés of the division of biology—Messrs. Higginson and Bailey—whose mission was to make an examination on the lands in the neighborhood of Carlsbad strictly with reference to their adaptability to the culture of the sugar beet. Their verdict, after a close examination, was that the sugar beet had its natural home in this county, and that the industry was as yet in its veriest infancy.

RAILROAD FACILITIES.

The completion of the Pecos Valley and Northeastern Railway to Amarillo, as noted above, now gives that road a total length of 370 miles, its southern terminus being located at Pecos City in Texas, on the Texas and Pacific Railway. It places Carlsbad within twenty-four hours' ride of Fort Worth and Dallas, Kansas City thirty hours, St. Louis forty-eight hours, and Chicago fifty-two hours. Connections are made with three trunk lines, two at Amarillo, the Atchison, Topeka and Santa Fe, and the Denver, and with the Texas and Pacific at Pecos.

THE CLIMATE.

The Territory of New Mexico has for many years been renowned for its perfect climate, its absolute freedom from all malarial complaints, and the wonderful effect it has in pulmonary diseases when not too far advanced. Men are living in Eddy County to-day who came here ten years ago to die. The equable weather, the dry and bracing atmosphere at once asserted their power and begun to heal the torn and bleeding lungs and quiet the troubled nerves. It is a climate, too, that appears to infuse new vigor both in the body and in intellect. The desire of the old Roman to have "Mens sano in corpore sano" (a sound mind in a sound body) finds its living realization on the streets of Carlsbad in the person of nearly every man that has made the valley his home for any length of time. The mean temperature of the summer is 80°, seldom exceeding that figure, and in winter 42°, while for spring and autumn it is 60°. The following from the pen of Dr. C. H. Wright, one of Carlsbad's leading physicians, verifies the above statement:

> During the last few years the medical profession has made great progress in the study of climatology as a relief and benefit to nearly all constitutional diseases. The climate of southeastern New Mexico, and especially the Pecos Valley, is rapidly becoming known as a panacea for all bronchial and lung troubles, as well as great benefit to stomach and kidney derangements. This fact is thoroughly substantiated by the multitude of cures which have been effected here in the last ten years. The Pecos Valley has been well described as the natural sanitarium of the world, and why? First, because we have all the requisites to make a complete health resort, namely, a dry air, a pure air, an air of moderate temperature, not contaminated by passing over swamps or through large cities, but coming direct from mountain ranges, and contains nothing but life-giving elements. Second, we have what but few places in this region can boast of, pure water, as well as springs containing medical properties which are a benefit to stomach and kidney troubles. Last but not least, the almost perpetual sunshine. The absence of sudden changes of temperature is one of the strong features of this section, which is a great aid in all forms of diseases or weakened conditions.
>
> During the last year the county of Eddy has had no more deaths among the residents from disease than you could count on your fingers, which speaks well for a population of over 3,000 inhabitants. Although we have had an epidemic of measles which traversed the whole county during March, April, and May, there has not been a death reported either from the disease itself or complications, which is sufficient proof that not only is the climate a benefit to chronic troubles, but greatly modifies the acute infectious diseases. One coming to the valley for the first time from the north must evidence surprise at how little he suffers from the heat. We have no sultry days followed by more sultry nights. The nights are clear, cool, and refreshing. The population of Carlsbad and surrounding country is largely made up of people in search of lost health. To-day they are energetic, strong, and enjoying the best of health. These are our best advertisements. In my two years' practice here I have not seen a single case of pulmonary trouble but what was benefited by the climate, and I believe my fellow practitioners will testify likewise. The great point for physicians sending patients here for beneficial effects of this climate is not to wait too long. But all cases of pulmonary trouble will be benefited if the decided firm grip of death does not expect to claim him in a few days.

MINERAL SPRINGS.

About a mile northwest from the town of Carlsbad, on the banks of the Pecos River, is a group of springs that in times past were thought to be remarkable merely from their unparalleled flow of water, two of the largest emitting a stream at all seasons, wet or dry, of over 5,000 gallons a minute each, and the others of lesser amounts. A year or more ago, it having been noticed that the water of the larger of the

Four-year-old Apple Tree, Pecos Valley.

two springs appeared to be strongly impregnated with minerals, it was suggested that it be analyzed. The result was that the waters were found to be almost analogous with those of the great mineral spring at Friedrichshalle, in Germany. The spring was then named Carlsbad. The rapidity with which the healing qualities of its waters became known, the almost instant relief it gave to stomach and kidney troubles that had stubbornly resisted medicine, and its effects on rheumatic complaints called so much attention to this locality that it was determined to change the name of the town, then known as Eddy, to the name of the spring, Carlsbad. This change was effected by a popular vote on the 23d day of May 1899.

GEOGRAPHICAL SITUATION.

Eddy County lies between the thirty-second and thirty-third degrees of latitude, the two degrees forming almost exactly the northern and southern boundaries of the county. Its altitude is 3,200 feet. It extends north and south 66 miles and east and west 95, being rectangular in shape and containing about 6,300 square miles. Of this area the lands bordering on the Pecos River, extending from 3 to 10 miles on either side, are of extraordinary fertility, producing, wherever water is introduced, every cereal, vegetable, and fruit known to the temperate zone in abundance and with unfailing regularity. The balance of the land is strictly pastoral, and the nutritious grasses with which it is for the most part covered are producing now as excellent cattle as are to be found anywhere in the Territory.

THE IRRIGATION SYSTEM.

This all-important feature in the development of the country is naturally the first one about which inquiries are made by prospective immigrants or investors. Taking the irrigation system of the valley as a whole, it is beyond all question the largest in America, and the immense sums that have been expended on it make it the most complete as well. In Eddy County there are two large artificial lakes, covering a superficial area of some 10,000 acres, with a capacity of 100,000 acre-feet—that is to say, holding sufficient water to place 1 foot of water on 100,000 acres of land. There are now in active operation 40 miles of canals and main laterals, so arranged that at any time they can be extended in any direction. The main canals are from 30 to 45 feet in width, and constructed in the most substantial manner. The annual water rent imposed by the irrigation company of $1.25 per acre is said to be the smallest fee for similar service in the United States, and thus far in its history this company has never caused a dollar in loss to its customers by a failure to supply them when needed.

PRODUCTS.

It may be said that up to this time the soils of Eddy County have developed peculiar fitness for four different products, all of which they produce, when properly irrigated, with regularity and in abundance. These are fruit, alfalfa, vegetables, and the sugar beet. It is to these that the county thus far has looked for its permanent and positive advancement as an agricultural center.

As to its fruits, while nearly every variety thrives and makes rapid growth, the peach produces most abundantly, and in size, flavor, and appearance it fully equals any raised in the country. The orchards are absolutely free from bugs or fruit pests, and a specked or wormy peach or apple is unknown. During the present year from the Rio Pecos orchard alone, an orchard covering but 16 acres, over 3,000 boxes of the very finest fruit will be shipped, and the demand is such for fruit from this section that not one-half of it can be satisfied.

Alfalfa produces on an average 5 tons to the acre annually, in four and sometimes five cuttings, and what might be called almost the standard price for the hay in Carlsbad is $10 a ton, with a demand that usually exceeds the supply. Many cattle feeders who this year propose fattening cattle and sheep are leasing alalfa pasture for which they pay $5 an acre for the season. Beef and mutton fed on this sweet and nutritious clover acquire a flavor contributed by no other fodder.

Of the minor sources of revenue—that is to say, those requiring a smaller capital to start them—the raising of vegetables presents a field of profit in this country for which it would be hard to find a parallel anywhere. In the first place, there is always a large home market, and the prices obtained are always highly satisfactory to the grower. One man last season cleared $5,000 on 20 acres of celery. As to asparagus, there is just sufficient alkali in the soil to not only render the cultivation of this esculent very easy but highly profitable as well. It matures in the spring fully a month earlier than in the North or in Texas, and consequently commands a high price. Other vegetables, in fact nearly every sort, thrive in the rich river bottoms of Eddy County, and with a few acres, 5 or 10 at most, a man with a little money for seed and a few farming implements can not only make a good living the year round, as the soil can be worked to advantage here every day of the 365, but he can in a short time render himself independent of the world.

In conclusion it can be said that it takes no prophetic eye to foretell the future of this country. The evidences are at every hand, standing forth legible as the hills, clear as the noonday. Wherever the hand of man has introduced water upon these hitherto arid wastes he changes them into fertile and productive fields, rich with the fruits of the earth. He stands astounded at the result of his own handiwork. He finds that here amidst the brown hills and the sage-brush deserts of the Great West an oasis of shade and verdure has appeared, destined, like the great banyan tree of the forest, in the coming years to yield shade and fruit to wide neighborhoods of men.

GRANT COUNTY.

The past year has been one of unprecedented prosperity in Grant County. The two principal industries of the county, cattle raising and mining, have proved more than ordinarily profitable. The high prices obtaining for cattle have enabled many of the stockmen to acquire residences in the cities and towns, where they avail themselves of the greater educational facilities for their children.

In mining, phenomenal success has been attained. Never in the history of any of the Western States and Territories have there been made such rapid strides in the development of the wonderful mineral resources of the West.

AGRICULTURE.

The agricultural resources of Grant County are but little developed, and yet the area under cultivation would supply an abundance of food products for the inhabitants of the county if properly managed and cared for. The principal agricultural section of the county at present is on the Mimbres River, a small stream situated in the eastern portion of the county. There are now about 20,000 acres under cultivation upon this stream which furnishes the water for irrigation.

It is proposed to build a system of storage reservoirs which will store sufficient water to irrigate 100,000 acres of the choicest land in the West, which lie just below the site chosen for the main dam. Negotiations have been completed whereby the company will acquire title to this land, and within a few months work will be commenced upon the dam and reservoirs. The land will be colonized with thrifty farmers from the East, and hundreds of thousands of dollars now sent annually from this county to Eastern States for hay, grain, poultry, eggs, butter, and other farm products, will be kept at home.

The company is composed of Chicago capitalists, and is known as the Rio Mimbres Dam and Irrigation Company, with A. R. Burkdoll as resident manager. The company now has a lesser experimental irrigation system at work, and has 1,000 acres of land under cultivation. Here there is found the first producing canaigre farm in the United States. The cultivation of this crop is bound to soon prove a profitable and extensive industry, as it has been fully demonstrated that the valley of the Mimbres produces canaigre of superior quality to that grown in any other part of the world. The poorest of the many samples analyzed for the Rio Mimbres Dam and Irrigation Company gave returns of 30 per cent of tannic properties, while the canaigre tubers grown in other localities give 11 to 25 per cent of tannic values. This company has 200 acres in canaigre. As the canaigre tuber at two years' growth produces 12 tons per acre, and the product is worth $6 per ton upon the ground, when dug, it is plain that a canaigre crop is a very valuable one, and is obtained with less labor than is generally expended on other crops which give anything near as good cash returns.

There are thousands of acres upon the Mimbres producing fruit of superior quality, the peaches and apples competing successfully with those raised in the States, as, in fact, many carloads of apples especially have been shipped to the East and to Arizona. Fruit grown in the foothills of the Mimbres Mountains may have equals elsewhere, but superior it would be difficult to encounter. A fortune awaits the happy man, who, having the means, has the business foresight to erect a canning plant in that neighborhood.

On the Gila River, to the north and west of Silver City, there are about 5,000 acres under cultivation, one-fifth of which is operated by the Gila Farm Company, which, besides raising all of everything required for home consumption, produces all kinds of fruits of the finest grades obtainable anywhere. A small apiary on this farm produces 10 tons of honey annually. With storage reservoirs and dam properly constructed the area of tillable land along the Gila could be increased to 50,000 acres.

LIVE STOCK.

The cattle interests of Grant County are by no means an insignificant feature of wealth, amounting as they do to a considerable sum of money yearly to the thrifty stock grower. Grant County is by far in the lead of any other section of the Territory in this important industry. The shipments for a number of years past have been unusually heavy, that of 1898 aggregating in round numbers $1,000,000 in value. Silver City is the largest shipping point for cattle in southern New Mexico, and during the busy season the festive cow puncher is a familiar sight upon the streets. The stock yards south of the city are large, easy of access, and supplied with all the modern conveniences. Stock from all the northern and western sections of the county ship from here, as also frequent shipments from southern Socorro County. The Santa Fe system pays special attention to this large and lucrative branch of their business.

The recent rise in the prices for beef cattle has proven an incentive to stock growers, and they are consequently giving the subject of better beef their strictest attention. The stock cattle of this immediate vicinity are of a high grade, and the profits are accordingly great.

Prices have been good, ranging from $16 to $18 and $22 for yearlings, twos, and threes. The ranges, both mountain and valley, are good this year, as rains have been abundant and cattle had fared well during the winter last past. Sheep and goats, of which there are quite a number in this county, have proven remunerative to their owners as food producers, while the wool and cashmere fleeces have been disposed of at fancy figures. The stockmen of this section all wear smiling countenances, and some of them diamonds. Their bank rolls have increased amazingly during the past six months, and fall sales promise to greatly add to their already plethoric purses. Cattle passed through the winter well and the calf crop this year is good. The outlook is decidedly encouraging and the stockmen accordingly in happy spirits.

Hog raising has hardly as yet become a distinctive industry, although there are several small concerns in operation in the Burro Mountains, where mast is plentiful. A few farmers along the Middle Gila who raise corn extensively and who have no immediate market for their crops put it into pork, which readily brings 5 and 6 cents per pound in Silver City.

There are a few extensive horse farms in the county, but they are mostly conducted in connection with the cattle ranches, as riding ponies are a prime necessity to the cow man and are constantly in demand to replace worn out and aged stock.

HOT SPRINGS.

There are a number of mineral springs in the county, some of which have proven to possess remarkable medicinal qualities. The celebrated Hudson Hot Spring, located about midway between Silver City and Deming, on the line of the Atchison, Topeka and Santa Fe Railroad, has already achieved a wide reputation as a health and pleasure resort. The temperature of the water registers 142° F., and is almost a sure cure for rheumatism, blood and kidney diseases, and various other complaints.

The hotel accommodations are of a superior quality, and during the summer months no more delightful pleasure resort can be found in the country.

The Gila Hot Springs, 50 miles north of Silver City, are much sought for their medicinal qualities, but the accommodations are not as good as they might be. Camping, hunting, and fishing parties to the higher Mogollon country frequently make this a stopping place, and the ladies of the party enjoy themselves here while the men folks go up into the mountains after large game, which can be found in abundance.

SILVER CITY.

The county seat of Grant County is located in a pretty mountain valley surrounded on all sides by rolling hills, which serve to protect it from high winds. The altitude is 6,021 feet above sea level; the average yearly rainfall for a period of twenty years was 14.18 inches; the mean annual temperature is 55°, the average for the summer months being 72°. On the coldest of winter nights the thermometer rarely falls lower than 12° or 15° above zero, while the days are always temperate, ranging from 45° to 70° in the middle of the day.

In summer time the thermometer ranges from 70° to 90° during the day, seldom reaching 96°, while the nights are delightfully cool, having an invigorating effect upon the system. These temperatures, taken in connection with the dryness of the atmosphere in this latitude and at such an altitude, renders it one of the most delightful climates of the world, its recuperative and health restoring properties being attested by thousands who have come from other climes to enjoy its beneficial effects.

It is a thriving and prosperous town of 3,500 inhabitants, the American element largely predominating. The population of Silver City will, in point of intelligence and education, compare favorably with that of any town of like size in the world, and it is fully equal, if not superior, to any community in the United States as a law-abiding body of citizens. Larceny, burglary, and kindred crimes are comparatively unknown, while civility and politeness mark the demeanor of all whom you meet.

It is one of the most substantially built towns in the United States, brick and stone being used exclusively—not a frame building within the city limits. There are four churches, Methodist, Episcopalian, Catholic, and Presbyterian, each of the edifices being a credit to the congregations which built them.

The educational facilities are better than in most towns of similar size in the Eastern States. The first public school in the Territory was organized here, and to-day has a very large attendance. Besides the public school, the Territorial normal school is located here. The institution is one of the best in the country, its fame as a thorough training school for teachers inducing pupils from other States and Territories to come here to complete their education and training in their chosen profession. The Sisters of Mercy conduct the Academy of Our Lady of Lourdes, where many Catholic children receive a liberal education under the beneficent care of the good Sisters.

Silver City is the supply point and distributing station for a large area of territory, which thus becomes tributary to it. It is thus rendered a very prominent mercantile as well as financial center, and a great amount of business is done by the merchants, as also an enormous volume of financial exchanges is transacted through the medium of the Silver City National Bank, a conservative banking house wherein all the most approved business methods are in vogue.

The city has a first-class waterworks system, as well as an electric-light plant of the latest improved design, each owned and operated by a private corporation. All of the most modern conveniences and luxuries of civilization are enjoyed by the residents of Silver City.

DEMING.

The second town in population and commercial importance of Grant County has 2,000 inhabitants. It is a port of entry for cattle and other imports from Mexico. It has a fine schoolhouse and a good corps of teachers, and the attendance is quite large. A very large area of cattle-raising country, extending 50 miles south to the Mexican boundary line, is tributary to this city of the plain, as also the following mining camps find here their base of supplies and mercantile center: Hachita, Volcano, Apache, Tres Hermanas, Cooks Peak, and Florida. It has two churches with comparatively large congregations, an opera house, waterworks system, with the purest water found in any town in the world, and all modern conveniences.

The town site is laid out upon one of the most attractive and desirable plateaus of the Southwest, having an altitude above sea level of 4,800 feet. Situated as it is at the junction of two great continental railways—the Atchison, Topeka and Santa Fe, and the Southern Pacific, which span the continent—and the Sierra Madre and Pacific, and the Sonora, Sinaloa and Chihuahua roads now under active construction, which will afford practical means for the development of the great industrial resources of the States of Sonora, Chihuahua, and Sinaloa, in northern Mexico, it is especially designed to offer every inducement to the various manufacturing interests of the country, the best facilities for handling the enormous amount of traffic growing out of the development of the great mineral, agricultural, and pastoral resources tributary to Deming.

Commercially considered, the location gives to the town superior advantages, and the completion of the Southern lines of railroads into the Republic of Mexico, in connection with those already established, will give to Deming the prestige of being a center of wealth, of commerce, and manufactures in a Territory whose area is an empire in extent, the resources of which embrace every known article used by civilized man.

MINES.

The mountains, which occupy fully one-fourth of the area of the county, are pregnant with all of the minerals and metals most useful to mankind. Gold and silver have been produced from the mines for a quarter of a century past, while Grant County is proud of the distinction of having the oldest copper mine in the United States—the Santa Rita del Cobre, which was worked by the Spaniards more than a century ago. Enormous veins of the richest and purest iron occur at several places, hundreds of tons of the ore being shipped daily to the iron and steel works at Pueblo, Colo., and to smelters at other points.

Ranking first among the mining facilities of Grant County should be enumerated the Silver City Reduction Works. This smelting plant, which one year ago was handling 60 tons of ore per day, has grown in capacity, as it has grown in favor with the miners of the Western States and Territories, until it now has a capacity of 240 tons per day. It draws its ore supplies from all parts of New Mexico, from Arizona, Utah, Colorado, California, and Old Mexico. This rapid progress and success is due to honest, capable, and efficient efforts of the officials in control of the concern. The works are owned by the Hearst estate, with Bev. Risque as president of the reduction company and S. E. Bretherton as general manager. It gives the miners a home market for their ores and saves the cost of transportation to distant smelters.

By the use of very recent improvements, patented by members of the company, the cost of smelting has been reduced to the minimum, and the saving thus made is shared with the miner, which in a great measure accounts for the rapid growth of the works.

SANTA RITA.

The copper mines of this district are proving to be of phenomenal richness and extent. This wonderful body of ore is without parallel in size, and the percentage of copper greater than in any large copper mine known. Geologically, it is an isolated occurrence, conforming to none of the heretofore conceived ideas of formation of ore bodies.

The area occupied by this enormous mass of ore is fully 1 mile square, the entire mass being ore which can be profitably worked, with the exception of three small vertical bands of quartzite which contain no ore. All the balance of this great mass is ore, and ore of superior quality to the average of the copper-producing mines of the world. These mines gave employment to 400 men from January until June of this year, and many thousands of tons of rich ores were extracted, many carload lots giving returns of from 60 to 75 per cent copper, while the average of all ore shipped was a fraction over 20 per cent copper. In June the property changed ownership, being purchased by Messrs. Rockefeller, Burrage, and associates for a cash consideration of $1,400,000. A corps of mining, mechanical, electrical, and civil engineers and experts are now upon the ground making plans for the erection of one of the most complete plants ever erected for the extraction of copper. It is safe to say that upon the completion of these works Santa Rita will rank among the greatest copper-mining districts of the world.

These mines are the oldest in the United States, having been worked by the Spaniards from the early part of the present century until the Territory was ceded by Mexico to the United States. Millions of pounds of copper were extracted and the metal shipped, on mules, to the City of Mexico. Two of the old forts, erected by the Spaniards for defense against Indians, are still standing, and the old dumps at the mine cover hundreds of acres, demonstrating the extent of the great excavations below. In later years the mines were worked intermittently by Americans, many of the ventures being failures on account of being harassed by the Indians, one firm losing nearly $250,000 by raids of the redskins. And thus these mines had an eventful though not always a prosperous career, until two years and a half ago when Arthur E. Dawson took charge as general manager of the property for J. Parker Whitney, of Boston. By indefatigable effort and economical management, without a dollar of capital, he put the mines on a paying basis. The dividends from the property continued to grow larger and the mines to attract more and more attention from capitalists until they finally purchased the property at the figures given above, and now it bids fair for Grant County to have at Santa Rita the greatest copper mine in the world.

PINOS ALTOS.

The old Spanish records in the custody of the Mexican Government at the city of Chihuahua tell of the discovery of gold at Pinos Altos by Gen. Pedro Almendaris, one of the early commandantes of the Mexican fortress at Santa Rita, distant 12 miles east, and where were situated the famous Santa Rita copper mines. The first discovery of gold by Americans was made on May 18, 1860, by Messrs. Birch, Shively, and Hicks. The camp was first called Birchville, in honor of Birch, who was the first to find the precious metal. Within six months 700 men were in camp looking for the gold lucre. In 1861 quartz mining was commenced, the Atlantic and Pacific lodes being located. Many other quartz veins were immediately located, the ores being reduced and the gold recovered by grinding and amalgamation in arrastres. From twenty to fifty arrastres were kept in constant operation until 1866, producing in the neighborhood of $300,000. Adding to this the gold produced from the placers, and the total of gold produced in the first five years would amount to over $500,000. Considering the crude facilities for operating the mines and the perpetual dread and uncertainty caused by frequent Indian attacks, it was a remarkably good showing. In 1866 a 15-stamp mill was erected by Virgil Marston. This, the first modern machinery in the camp, was quickly followed by other mills of the same kind, which were kept in constant operation upon the oxidized, free-milling ores from the surface of the veins. As depth upon the veins was attained the sulphureted ores were encountered, which proved a serious obstacle to the amalgamation of the gold by the processes then in vogue.

In 1883 concentration of the sulphurous ores was attempted by Messrs. Place & Johnson, but the process was a failure for lack of experienced operators. In 1884 Peter Wagner made a success of the concentration process upon the ores of the camp, and the same year Messrs. Bell & Stevens purchased and put in successful operation the Place & Johnson concentration plant, which had heretofore been pronounced a failure. From that time until last year the ores have been worked by amalgamation and concentration of the tailings, the concentrated product being shipped to the smelting works.

The several claims upon the Pacific vein which were purchased by the Hearst estate two years ago have been systematically exploited, under the superintendency of B. B. Thayer, an experienced mining engineer. Several shafts have been sunk upon these claims, one of them having attained a depth of nearly 1,000 feet below the upper workings at the apex of the hill. The ore body exposed is probably the most continuous, both vertically and laterally, that has ever been developed in any gold mine. The width of the vein varies from 6 inches to 10 feet, while the gold value will average about an ounce per ton. A pipe line has been built to bring water from the Gebhardt Springs, 8 miles away. A mill of 60 tons capacity is now in course of construction and has an assurance of a long and successful run, as more than sufficient ore to keep the mill steadily employed for five years is now blocked out and ready for extraction. It is probable that the mill capacity will soon be increased, if it be found that the water supply is sufficient. In the meantime a 10-stamp mill is working steadily upon the ore extracted in development work.

The Atlantic and Deep Down mines are being developed by Gillig & Co., of New York City, who purchased the properties from the Treasure Mining Company, a Denver corporation, that worked the property for two years at a good profit.

The Golden Giant, Rathburn, Langston, and other properties have been constant producers of gold bullion for many years and have added their share to make up the millions which the camp has produced.

HANOVER.

This camp is a mineral wonder, both as to variety of ore and extent of ore bodies. Here are found enormous veins of iron from 10 to 50 feet in thickness. From two of these mines the Colorado Fuel and Iron Company are shipping 200 tons per day, and this output will be largely increased on the completion of the railroad to the mines, which will be about October 15, 1899. Large quantities of copper ore are being shipped from the Modoc group, the Humboldt, Hanover, and numerous other mines. Manganese occurs in large quantities, and lead ores have been profitably mined here. Like its close neighbor, Santa Rita, its greatest wealth is in copper, the production of which is increasing at a rapid rate.

CENTRAL.

This district really comprises within its boundaries the mining camps of Santa Rita and Hanover, but the name is more especially applied to designate the locality immediately contiguous or within a few miles of the town of Central. Here are found several lead, silver, and gold mines. The principal mines of the district are the Texas and Grand Central, owned by the Bayard Milling and Smelting

Company, a company of Philadelphia capitalists, represented by H. Niles as resident manager. These mines have been developed to a depth of 500 feet, showing a large vein of ore rich in gold and silver and proving the permanency and value of the veins of the district in depth. A concentration mill upon the mines is being successfully operated.

OTHER MINING CAMPS.

Chloride Flat, 3 miles from Silver City, has produced over $3,000,000 in silver; even at the present depreciated price of silver several of the mines are paying well.

At Alhambra, the Alhambra mine is being worked and very rich silver ore is being extracted.

At Victoria, large bodies of high-grade lead ore have been extracted from the mine which gives its name to the camp. Wolframite, a rare and valuable mineral, is also found here.

At Stein's Pass, Granite Gap, Hachita, and Volcano rich lead and silver mines are being opened and are producing large profits.

At Gold Hill, the Reservation, Standard, Nancy Lee, and other gold mines are producing bullion.

At Paschal, in the Burro Mountains, several copper mines are being profitably worked for the higher grade ores, which are shipped to the smelters, while other very large bodies of lower grade ore are awaiting the advent of capital to erect suitable reduction works upon the ground, when these ores can be mined and copper produced at a very large profit.

The prospects for the immediate future of Grant County could not possibly be brighter. Prosperity reigns throughout the county, no boom nor excitement, but everything on a substantial and paying basis, with still greater prosperity assured from day to day as the resources of the county are developed more and more.

GUADALOUPE COUNTY.

Guadaloupe County, the banner grazing county of the Territory, with hundreds of thousands of acres of land of the very finest for settlement, offers unexcelled opportunities to the home seeker. Almost the whole eastern part of this county, embracing part of the so-called staked plains, is covered with the finest of grama grass. Water is found within a few feet of the surface, and it needs only the master hand of man to create a veritable paradise here.

As a sheep country Guadaloupe County is ahead of them all. The finest improved Merino herds are found here, and the wool produced is without doubt the finest in quality and strength of staple. Next to the sheep industry comes that of cattle, both of which are successfully carried on in this county.

The agricultural crops of Guadaloupe County are alfalfa, fruit, and cereals. Apples and pears here excel in flavor and size, being similar to fruit raised in California.

As yet little efforts have been made to develop irrigation enterprises. In this direction most excellent opportunities are offered, especially at Fort Sumner, where 12,000 acres of land could be irrigated at nominal cost.

Puerto de Luna, the county seat of Guadaloupe County, has a $20,000 court-house, several large stores, good schools, and about 1,500 people, and is the center of a fine stock and agricultural section.

The Pecos River, with its excellent ditch system, furnishes an abundant water supply to this section of great promise.

The climate is mild and the altitude is such (being about 4,000 feet above the level of the sea) that a more desirable locality can not be found anywhere for sheep and stock raising. Sheep raising has been a most important industry here, particularly with the native people. Cattle raising is fast becoming one of the principal industries, and it is meeting with much favor and success.

The mineral lands found in this section embrace gold, silver, copper, coal, and iron. Coal has been found, and is of good quality.

Oats, potatoes, barley, and timothy are chiefly grown, and the ranch houses and homes for live-stock raising are numerous. As a live-stock country this locality is specially adapted to the raising of horses.

But as a pleasure and health resort this locality has become famous. The scenic effects are grand. The country is wild and broken, and much game abounds, including bear and deer, while the streams are literally alive with mountain trout running as high as 5 pounds in weight.

Splendid pine forests cover the mountains and mesas, and the timber industry is a most important and growing one, and in the near future, with some investment of capital, Guadaloupe County will come to the front in the development of her resources.

LINCOLN COUNTY.

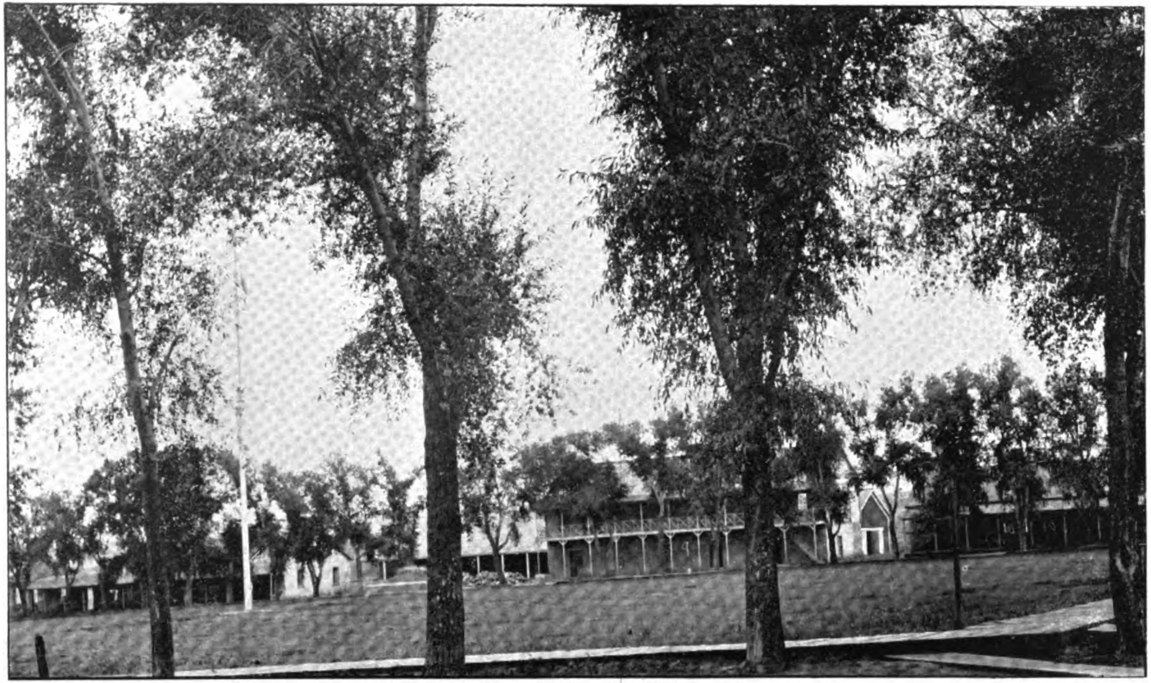
Lincoln County is situate in the southeastern portion of New Mexico, and embraces an area of nearly 5,000 square miles since the last division of it, when the entire southern portion of it was set off to the new county of Otero.

The general surface of Lincoln County is comparatively level, but broken here and there by detached ranges of mountains, rendering it one of the most desirable, as well as picturesque, portions of the Territory of New Mexico.

The climate of this section is an ideal one, being far enough south to avoid any very severe cold weather during the winter, and the altitude, combined with the cooling rains which almost invariably prevail through July and August, render outdoor life peculiarly delightful during the summer and fall, and make it a veritable "promised land" for the home and health seeker.

This county at present has a population of about 9,000 inhabitants and an assessed valuation of $1,608,226, or a fraction over $24.72 per capita. When we take into consideration the fact that it is almost universally conceded that the assessment rolls never represent more than 60 per cent of the actual value of the property, these figures make an extremely favorable showing as to the financial standing of the people in this county.

The principal industry thus far has been the raising of live stock. The ranges in this section are well sheltered by foothills and numerous belts of timber, and the grass is abundant and nutritious, so that stock thrive well the year round, making cattle as well as sheep raising here not only safe but highly profitable. The latest estimate, made just prior to June 1, 1899, places the number of cattle on the ranges of the county at 41,046 and their value at $451,511. This, however, can not be considered a fair showing, as most of the ranches had made their usual spring shipments prior to the time the list was



FORT STANTON MILITARY SANITARIUM.

made out, one firm alone having shipped 28,000 head of cattle in March previous, which was more than one-half the total estimate in June.

Of sheep there were 64,390; goats, 7,787; horses, 2,780; mules, 102. There were also 257 burros and 4,148 hogs in this county listed for taxation. Owing to the long distance from a suitable market but little attention has heretofore been given to agriculture. Only enough grain and vegetables have been raised to supply the local demand. The county now has 10,883 acres of land under cultivation, the larger portion, of course, lying along the watercourses and subject to irrigation, though in certain localities, notably along the eastern foothills of the White Mountains, a large tract has been producing abundant crops for the past five years without any moisture whatever except that retained by the soil from the winter snows and the annual rains. There can be no possible doubt that deep plowing, with subsoiling and thorough cultivation, would cause much of the land in this region, especially that contiguous to the mountain ranges, now classed as "arid," to grow most of the cereals and all kinds of vegetables at a very fair profit. No finer fruit, either in size, quality, or flavor, can be produced in any country than that gathered from the orchards around the White Mountains in Lincoln County. Now that a market has lately been opened up by the coming of the railroad, fruit raising will receive much more attention, and in a few years will form quite an item in the freight shipments to El Paso and other points.

The phenomenal success of the Coe Brothers, on the Rio Ruidosa, A. C. Austen and P. G. Peters on the Rio Bonito, Mrs. S. E. Barber on the Three Rivers, and many others throughout the county, has stimulated other ranch owners in their vicinity to plant extensive orchards with the best varieties of fruit trees adapted to the soil and climate, so that the time is not far distant when the valleys and even waste places will burst forth into a fragrant cloud of peach and apple blossoms.

Lincoln County is, perhaps, more abundantly favored by nature than any other section of equal scope in the Southwest. Aside from its vast areas of grazing and agricultural lands, which are as yet but little more than half utilized on account of an inadequate supply of surface water, its other resources are enormous. From the Gallinas Mountains on the north to the White Mountains on the south, a distance of about 80 miles, there lies a practically inexhaustible mineral belt. There is not a mountain range within its border where the precious metals, in some form, do not crop out on the surface. This fact has been well established for years, but the long distance from any line of railroad communication has prevented the development of these vast resources of wealth, as the transportation of other than gold ore was made impossible.

Only in cases where the deposits have proven to be so enormously rich that they have paid for their own exploiting from the surface down, and a dividend besides, has the work been prosecuted with any kind of system or continuity. It can be safely asserted that no mine in this whole mineral belt, with one or two exceptions, is being worked at the present time where the output of the mine itself has not paid the expense of operating and development, together with the cost of machinery for reducing the ore.

The Old Abe mine at White Oaks is an example in point. This mine is now down to the 1,200-foot level; no water has yet been encountered, neither is there any intense heat perceptible. This is probably the deepest dry mine in the United States. At this great depth the vein is less broken than near the surface and carries about the same amount of free milling ore with a large increase in the value of the refractory ore. It has always paid a handsome profit over the ordinary mining expenses when systematically and economically worked. During the past year the present management has purchased a coal mine, and put in working order for supplying the necessary fuel a 50-ton cyanide plant to work the tailings as they come from the mill, with many other improvements, and the mine has paid for them all with ore taken from development work, as but little sloping has been done.

The North and South Homestake mines in the same district are down to the depth of 1,000 feet and 600 feet, respectively, with a large amount of underground development work, and always paid a handsome dividend when properly managed.

The Lady Godiva, Little Mack, Rip Van Winkle, and many other mines in the White Oaks district, have been exploited sufficiently to show that they are of about the same character as the mines already demonstrated by deep workings.

In the Jicarilla Range, 12 miles northeast of White Oaks, the gulches are full of placer gold, estimated at several million dollars, but as yet are worked only in a crude, spasmodic way, owing to the scarcity of water, which has to be hauled several miles in order to obtain the gold by panning. This when obtained is rather coarse and almost pure. A plan is now on foot to pipe the water from the Capitan Mountains, a distance of 21 miles, in sufficient quantity to wash out this gold by hydraulic process.

In the Gallinas Mountains, still to the north, there are many fine prospects carrying copper carbonates and sulphides; also lead carbonates and galena, carrying as high as 40 per cent lead and 20 per cent silver per ton. This is comparatively virgin ground on account of the long distance from any base of supplies and the expense of shipping ore.

In the central eastern portion of the county is the El Capitan range of mountains almost entirely unprospected, although some very fine ore, carrying both copper and gold, has been located in that region.

The Nogal and White Mountain ranges, in the southern end of the county, contain a veritable network of mineral-bearing leads, much of it low grade, it is true, but in immense bodies, which, after all, are considered the more valuable in the eyes of experienced miners. Among the more productive mines in this Nogal district might be noted the American, where its original locator, Billy Gill, ground out a fortune with the aid of a mule and an arrastra; the Hellen Rae, from which old man Rae carried a gunny sack of ore down to his cabin daily and pounded out enough yellow metal in a mortar to wear a silk hat and a syndicate smile the remainder of his days, and then sold the claim to St. Louis parties for $10,000. The owners have since put in a reduction plant.

The Hopeful, generally called the Parson's mine, where a mountain of low-grade ore lies dormant because the heirs could never agree to work it themselves or fix a price on the property so that its volume of gold may be added to the whole product.

This whole vast mineral belt, which in its entirety contains almost every known mineral, is now open to the world. It never has been thoroughly prospected. The land practically belongs to the General Government, and perfect title can readily be obtained, as there is not a land grant in Lincoln County.

The building of the El Paso Northeastern Railroad into the heart of this region has stimulated all manner of enterprises more than any event in its history, and many fortunes will be made here in the next few years by those who have the courage to venture and the capital to invest.

In addition to the precious metals, there are in the vicinity of White Oaks, which is the natural business center of the county, ledges of black, gray, and white marble over a mile long. Here, as well as at the Salado and in the Jicarilla Mountains, are immense bodies of iron ore running from 50 to 70 per cent. Nature, to more especially endow this portion of the great domain, has underlaid 200 square miles of it with a vein of bituminous coal, the quality of which can not be excelled west of the Mississippi River. Openings have been made in these coal measures at White Oaks, at Salado, and at other points, sufficient to prove their quality and continuity. Inside of two months this county will be supplying El Paso and the Southwest with fuel of a very superior kind at greatly reduced rates. So cheaply can this coal be mined that at White Oaks the very best quality is being delivered to consumers at $2.75 per ton.

In the county there have been forty-three school districts already organized, and there are 1,438 children of school age.

At White Oaks is a school building which was erected at a cost of $10,000, with four rooms furnished. Nogal, Lincoln, and Picacho each have public school buildings suitable for two departments. The other districts are all supplied with school buildings of fair capacity. For the past few years much interest has been taken in educational matters throughout the county, and the per cent of illiteracy is growing rapidly less each year.

Being in direct communication with the outside world, this long isolated region will now receive a great influx of money and capital to aid in developing its unlimited resources and to uncover new mines of wealth.

As to the climate, the General Government settled that when it established a marine hospital at the Old Fort Stanton Military Reservation, near the geographical center of the county, where it proposes to test the agency of mild and pure air, tempered with the greatest amount of ozone, in the treatment of tuberculosis.

SALADO COAL FIELDS, IN LINCOLN COUNTY.

The present terminus of the El Paso and Northeastern Railroad will be Gray, a village in the center of the Salado coal fields, Lincoln County, N. Mex. Here are thousands of acres of coal, connected by a railroad to a region where coal is at a premium—the region surrounding El Paso.

As soon as the railroad became a certainty men were put to work at once in the Salado mines, and many tons of coal are now waiting the welcome whistle of the locomotive to be carried to El Paso, where the market is sure and steady.

The coal is excellent for steaming purposes, and is destined in time to be used most exclusively by the different factories and smelters in Pass City, and also in the northern and interior of the Republic of Mexico.

The railroad having now reached the coal fields, it is expected that within six months from this date more than a thousand miners will be working in the Salado district.

MORA COUNTY.

The county of Mora is bounded on the east by Union County, on the north by Colfax, on the south by San Miguel, and on the west by Rio Arriba and Taos counties. This county has an area of over 2,000 square miles, consisting of well-watered and as fertile and productive agricultural and horticultural, as well-grassed pastoral, as rich mineral, and as densely wooded timber lands as can be found in any other locality in the great Southwest.

A choice of remunerative occupation is offered to either the farmer, gardener, or stockman; or, should the home seeker prefer to prospect for mineral, or be a lumberman, he can find among the mountain ranges of the western portion of the county, on Government land, free and open to all comers, sufficient inducement for that necessary labor which accumulates wealth in bringing to light the hidden treasures of the hills or in felling the giants of the forest.

The eastern portion of this county, all public domain, is entirely devoted to stock raising. The great plains lying between Union County and Red River support numerous herds of sheep, aggregating hundreds of thousands during all the year. This immense stock range is well watered, and, with sufficient shelter afforded by the many brakes and canyons, comes near to being the stockman's ideal of what a summer and winter range should be. The grass is black gramma, well known to be the most nutritious of grasses.

From Red River westward the country is broken by cedar-clad hills and open parks and glades; is dotted with picturesque stock ranches and small farms until the lower valley of the Mora is reached at Cherry Valley, from which point to the head waters of the Mora River large tracts of land are farmed, and all under irrigation systems, yielding heavy crops of alfalfa, the principal forage plant grown. Other crops successfully raised are meadow hay, oats, wheat, corn, and, in fact, all small grains give a greater return per acre in bushels, and many more pounds to the bushel, than any of the famous wheat or corn States.

From Watrous to the western boundary line of Mora County, on all the streams and throughout all the many beautiful valleys, very large amounts of grain and hay are annually harvested. Las Vegas is yet, and has been for decades, the principal market and distributing point for all crops raised in the upper Mora and tributary valleys, as well as the receiving and distributing point for all material timbers used by the Atchison, Topeka and Santa Fe Railway and sent for hundreds of miles north and south over its line.

The town of Mora is the county seat, and is situated in the midst of extensive valleys, thickly populated with prosperous and industrious inhabitants, the visible evidence of whose labor contributes in a marked degree to the prosperity of the community at large, and with the remarkable result that not less than 40,000 wagonloads of products from farm and forest, and of merchandise, agricultural implements, etc., are exported and imported annually.

As yet railroad communication between Mora and the outside world is lacking, but recently there has been incorporated the Las Vegas, Mora and Taos Railway Company, with principal office at Las Vegas, which intends to link those towns named in its title and bring them into close connection by means of a standard-gauge electric railway, thus giving to Mora all the advantages of being practically on a transcontinental line, through Las Vegas, on the Atchison, Topeka and Santa Fe Railway, as a gateway. The early construction of this line is almost an assured fact.

The opportunities for investment in Mora County are unsurpassed in the Rocky Mountain regions. To either the large or small capitalist, the millionaire, or the "man with the hoe" there are presented openings for the safe employment of money which will, in manifold manner, repay all judicious outlays.

With the construction of the proposed railway will immediately follow the installation of immense beet-sugar refineries, canning establishments, flour and oatmeal mills, planing and saw mills, and various other important industries, raw material for which will come from the surrounding country. One item alone, i. e., pease, will furnish to a cannery over 1,000,000 pounds per annum, equal to as many cans as pounds, and of as fine a quality and delicious a flavor as any imported French pease. The Mora pea can be bought for 1 cent per pound, and it requires but little arithmetical effort to figure between the cost and profit on an article at 1 cent per pound for raw material and 25 to 30 cents per can for the merchantable product. Beans in great quantities are also grown in all the valleys of western Mora County, and they will assuredly prove an additional industry to that of canning pease, especially as the New Mexico market is now clamoring for both of them. A very heavy export business can be transacted, and both canned pease and beans will readily sell in all Eastern cities.

The La Cueva Ranch Company has successfully proven the entire suitability of the Mora Valley soil for sugar beets, and a year or two ago planted a small tract, which produced the astonishing yield of 22 tons per acre, which, on analysis made by the chief chemist at the Territorial agricultural station at Mesilla Park, N. Mex., and by the chief chemist of the Agricultural Department at Washington, D. C., showed 19.7 per cent and 19.4 per cent of saccharine matter per ton of beets. The La Cueva Ranch Company has a standing offer to supply the crop off not less than 3,000 acres of beets for a first-class refinery located anywhere in the immediate vicinity of the ranch, which would be two-thirds of the tonnage required by a 100,000-ton plant. The tonnage lacking for such establishment can be easily furnished in close proximity, and an excellent opportunity is hereby opened to large capital to come and invest.

The amount of oats annually raised in the Mora Valley alone often exceeds 10,000,000 pounds, while 2,000,000 pounds of wheat is regarded as only a moderate yield. The following is about as the crops are annually—sometimes more, sometimes a little less:

Wheat	pounds	2,500,000
Oats	do	8,000,000
Corn	do	500,000
Hay	do	2,000,000
Alfalfa	do	1,000,000
Sheep	head	100,000
Wool	pounds	500,000
Pease and beans	do	2,000,000
Lumber	square feet	2,000,000
Piles	linear feet	200,000
Railroad ties		200,000
Cattle	head	2,000
Imports of merchandise, agricultural implements, etc	pounds	4,100,000

But in this connection it is only just and right to state that the area of land actually under the plow is but a mere patch compared to the whole area of the county, which statement is necessary to explain what would otherwise appear an extreme paucity of agricultural products. There are at least 500,000 acres of rich lands lying idle and uncultivated, all of which can be put under irrigation systems in the valleys of the Mora, Rio de la Casa, Sapello, Manuelites, Cebolla, Coyote, Rito, Agua Negra rivers, and several minor streams, all of which rivers and streams carry strong heads of never-failing water.

Fruits of all the hardier varieties grow both wild and in orchards in extravagant profusion; they also offer special inducements for the establishment of preserving or canning works.

In minerals the various sorts in constant demand for smelting purposes are abundant. Some of the finest specimens of copper ore ever brought forth from the treasure vaults of the Rocky Mountains are to be obtained in western Mora County. There is also gold-bearing ore, iron, galena, and other sorts awaiting exploitation and intelligent work of the prospector and miner to show their extent.

Coal of a semianthracite character has recently been discovered in apparently inexhaustible measures, which are of sufficient thickness and of such excellence as to establish their commercial value beyond all peradventure. When railroad transportation has been provided, Mora County coal will become known all over the West as a strong competitor in "black diamonds" with any other portion of the country.

The population of Mora County is not less than 17,000 souls. Its assessed valuation is about $1,200,000, being probably only one-third of the actual value.

The altitude runs from 6,000 feet above sea level to 10,000 feet, or perhaps a little higher on the mountain peaks.

The climate is similar to the rest of the northern part or plateau land of New Mexico, and surpasses that of any other country on the face of the globe for counteracting and curing all sorts of pulmonary complaints.

The scenery in the mountains is acknowledged to be superior to the Swiss Alps by those people who have seen both.

The hunter's paradise and the fisherman's ideal for trout fishing is here to be found; the many mountain streams abound in speckled beauties, while game, both feathered and furred, small and large, roams the hills on all sides.

The home seeker can purchase lands already under cultivation for $20 per acre and upward. Farming pays when such lands will readily and constantly yield 50 bushels, or 3,000 pounds, of wheat per acre, which is now selling on the ground at 1½ cents per pound, and never less than 1 cent, with a surety of no failures in crop on account of irrigation.

Many other farm products are raised in this county, and of late years potatoes have been most successfully grown; so much so as to enter into active competition with both California and with Greeley, Colo., bulbs in the home markets.

Vegetables of almost every known variety are grown throughout all the valleys and on all the farms in Mora County. Cabbages of 40 to 50 pounds in weight, as solid and sound as can be imagined, are common results of the gardener's toil. The soil seems peculiarly well adapted to onions, carrots, parsnips, turnips, radishes, and lettuces, and garden truck of all sorts attains speedy maturity, taking the place of and driving out of local markets all importations of vegetables from better-known parts of the West, on account of the superior flavor of the home-raised article. Celery flourishes in this county; large quantities can be raised for export in addition to meeting local demand.

In natural but as yet undeveloped resources Mora County can produce a great and varied abundance. Excellent clay for brickmaking; red and white sandstone; limestone; products of the forest, white pine, red and white spruce, cedar of sufficient growth for electric, telegraph, and telephone poles, and many other trees of commercial value all grow in great quantity and of remarkable thriftiness.

There is enough timber in western Mora County to build a railroad round the earth; enough white spruce to supply a very extensive paper mill, or several of them, with raw material for years to come. There is coal in endless amount for fuel for manufactories, canneries, beet-sugar refineries, etc., and raw product sufficient to supply their demands and keep them steadily in operation from the very moment they are ready to commence.

Excellent natural wagon roads, kept in good repair, cover the county with a regular network. All means of travel and transportation are now maintained by vehicles only, except where the Atchison, Topeka and Santa Fe Railway cuts across the country from Wagon Mound to Watrous, some 40 miles of line.

There is no county in New Mexico which presents so diversified a field for the safe employment of capital in large or small sums as Mora does. Good management, abundantly aided by fertile soil, permanent water for irrigation, and intelligent farming, will produce almost incredible results. The land requires no artificial fertilizer, as the water used in irrigating attends to renewing the soil every year, or just as often as irrigation is given the lands and the crops.

To first realize and afterwards appreciate what Mora County can show and offer to the world, personal inspection and investigation are absolutely necessary, as its most fruitful portions and choicest locations lie remote from the present railway and are not seen or even heard of outside their immediate environs.

M'KINLEY COUNTY.

The legislature of 1898–99 for the Territory of New Mexico by an act created the county of McKinley out of a part of the county of Bernalillo, which new county of McKinley will embrace all that portion of the county of Bernalillo lying within the following boundaries:

On the north the south boundary line of the county of San Juan; on the east commencing at a point where the south boundary line of the county of San Juan intersects the range line between ranges 8 and 9 west of the New Mexico principal meridian; thence south between ranges 8 and 9 west of the southeast corner of township 14 north, range 9 west; thence along the west boundary line between townships 13 and 14 north, ranges 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21 west, to the intersection of said line with the west boundary line of the Territory of New Mexico; thence north along the said boundary line between the Territories of New Mexico and Arizona to the point of beginning.

Although this new county has been created as above set forth, it will not be fully organized until January, 1901. Gallup will be the county seat. McKinley County is located in a rich coal-producing section of country. In fact, nearly the entire county is underlaid with coal and will undoubtedly in time be one of the richest counties and the most prosperous in the Territory, as it has numerous resources and advantages enough to make it so.

In the town of Gallup, the county seat, there are located the Crescent Mining Company, the Caledonia Mining Company, and a number of other large mining companies, employing hundreds of men. The coal mined is shipped to California, Arizona, and Old Mexico. There are also the Mulholland and Casna Mining Company, and United States Senator Clark owns and operates successfully a large mine about 5 miles west of Gallup. There are a number of other parties operating mines, the details of which will be found by reference to United States Coal Mine Inspector J. W. Fleming's report contained herein.

In addition to the immense and inexhaustible coal beds, there has also been discovered coal oil and deposits of asphalt in this county, which, however, have not as yet been developed to any great extent. This county is traversed by about 80 miles of railroad.

OTERO COUNTY.

Otero County, which was created in February of last year by an act of the thirty-third legislative assembly, has experienced a more remarkable growth than any region in the Territory since the locality came under the domination of the United States Government. The erection of this young empire is directly due to the efforts of C. B. and J. A. Eddy, railroad promoters, who induced Pennsylvania and New York capitalists to push a railway across 100 miles of barren and dust-choked plain to the Sacramento Mountains and tap a region previously devoid of market and destitute of shipping facilities, but prolific of all manner of farm products, fruit, timber, and minerals. The expenditure essential in reclaiming the locality from its primeval solitude aggregated over a million dollars, but the investment is already proving remunerative beyond the anticipations of the capitalists who furnished the money for the work.

The county is 6,912 square miles in dimension and contains 192 townships, or 4,423,680 acres. It is divided into the following classes of land: Land irrigable by artesian or pumped water, 1,228,800 acres; stock range, 2,584,320 acres; White Sands Desert, 138,240 acres. The Mescalero Apache Indian Reservation occupies 465,720 acres, or 738 square miles.

AGRICULTURE.

The high plateau of the Sacramento Mountains covers an area from 60 to 70 miles in length and 15 miles in width, and is a wonderfully productive agricultural country. Farmers are rapidly settling the locality, and they find a ready market in the county for all manner of farm and ranch products. Every ranchman is evidently in prosperous circumstances, for the railway has brought a market to their very doors, and the distance is so far to other markets that they have practically no competition and can command top prices for everything that they raise. The amount of land now under cultivation aggregates 1,500 acres, situated in the following portions of the county: Mescalero Indian Agency, 1,600 acres; Penasco region, 1,800; Fresnal Canyons, 1,300; Three Rivers, 800; Tularosa Canyon, 800; Sacramento River Valley, 600; Tularosa and vicinity, 400; Agua Chiquito, 400; Weed, 400; La Luz Canyon, 350; La Luz and vicinity, 200; Elk Spring Canyon, 200; Silver Spring Canyon, 150. It is estimated that there is fully 100,000 acres of fine farming land in the county that can be utilized for ranch purposes without irrigation. In the mountain region no irrigation is required except for cabbage plants and tender vegetables, which demand water before the spring rains commence. Wells are now being bored for artesian water, and when it is secured over a million acres of land in addition to that already available will be reclaimed for agriculture.

FRUIT GROWING.

The valleys and plains in the foothills and adjacent to the Sacramento Mountains furnish one of the best fruit-growing countries in the United States. There are now 23,500 fruit trees and 24,000 grape vines producing fruit in the county. The fruit trees are located in the following various places: Three Rivers, 5,000 trees; La Luz and vicinity, 8,500; Tularosa, 4,000; mountain country, 6,000. The Tularosa country has 15,000 grapevines; La Luz, 6,000, and Three Rivers, 3,000. Previous to this year there was no way of getting the fruit to market, and each season's crop was a total loss except for the small amounts required for home consumption. From time to time a few of the orchardists tried to dispose of their crops by hauling them over the rough mountain roads to Roswell, Eddy, White Oaks, Nogal, and El Paso, distances varying from 80 to 120 miles, but the cost of transportation and the time required in disposing of the fruit made the experiment unprofitable. With the railway facilities now available it will be possible to dispose of each season's crop without any difficulty, for the market embraces the whole Southwest, and the climate is such that a vast amount of fruit is required. Very few of these now engaged in fruit raising understand horticulture, but the methods employed in California and other great fruit-raising sections will come into general use here when the profits to be made in the business are realized. So far the trees here have been free from scale and destroying insects, and the total demolition of a crop by frost is unknown. There is less loss and risk attached to the fruit business in Otero County than anywhere else in the West. The fruit raised is remarkably large and luscious, and the flavor unexcelled. As an evidence of the remarkable worth of the region as a fruit-growing section, it may be well to call attention to the condition of one orchard at Three Rivers. In P. Coughlan's orchard this year the peach trees are so heavily laden with fruit that the branches of the trees are touching the ground, and in many instances have been broken. The peaches are from 3 to 6 inches in diameter, and it is estimated that this small orchard of less than 3,000 trees contains 200,000 pounds of peaches. They sell for 5 cents per pound on the El Paso market, and the crop, if marketed, would represent to him $10,000. Some of these peaches weigh as much as 19 ounces, and an exhibit at the World's Fair gained for them the premium. Apples from this orchard have been found to weigh 29 ounces. One tree contained 6,000 pounds of fruit. Marked success has attended the efforts of fruit growers in the higher mountain country, and apples do especially well there.

CATTLE GRAZING.

Otero County, with its abundance of water and 4,038 square miles of range, furnishes an ideal spot for the stock grower. There are now owned by residents of the county 39,500 head of cattle, and it is estimated that fully 50,000 head, owned by large companies having home ranches in adjoining counties, feed here. The large cow outfits that formerly occupied the range exclusively have for the most part disappeared, and the stock are now owned by numerous small stockmen, who are in a generally prosperous condition. With the price of stock advancing, the cattle industry of Otero County represents a neat figure in wealth.

SHEEP AND ANGORA GOATS.

The high table-lands and prominent foothills of the Sacramento Mountains furnish excellent pasturage for sheep and goats, and the business is being adopted by a number of newcomers in the county. There are 39,860 sheep in the county, and 12,000 Angora goats. The sheep men figure large profits from the business, and there is promise that it may become an important factor in the industries of the county. The county is such topographically that there is no danger of the sheep and cattle men coming in conflict with each other's interest.

TIMBER RESOURCES.

The timber belt of Otero County is estimated to be 20 by 80 miles in extent, containing the heaviest timber in the region from the Mescalero Indian Agency south to the headwaters of the Sacramento River, including the Toboggan, Weed, and Penasco countries. The Alamogordo Lumber Company is doing an extensive timber business in the mountains, and its operations will furnish timber for two large sawmills that are located in the town of Alamogordo. The force of men working in the woods numbers 135 at present, and it is the intention of the lumber company to double it as soon as possible. The shipments amount to 80,000 feet of timber per day, and experts state that the supply can not be exhausted in 50 years, even though the output be doubled. The extensive operations of the company furnish lumber to the El Paso and Southwestern market at a much less figure than Louisiana and Texas concerns can provide it. From Toboggan, the timber-shipping station of the lumber company, narrow-gauge railways have been run for a distance of 7 miles to the summit for facilitating the timber operations. The canyons are narrow, and hills steep, and the cost of working the timber is reduced to the minimum by the construction of slides from the top of the hills to the railway tracks below. The wages paid in the lumber country range from $2 to $3 per day. The timber averages in size from 18 inches to 2 feet in diameter, and occasionally timber is cut that is too large for the band saws of the mills to handle. One of the largest trees felled measured 6 feet 1 inch in diameter, and made ten 16-foot saw logs. Pine, white spruce, red spruce, and oak are the classes of timber most abundant. The red spruce furnishes the largest timber.

The two sawmills at Alamogordo have each capacities of 100,000 feet of lumber per day. A factory in connection with the mills is planned for the manufacture of sash, doors, blinds, moldings, and everything used in house building. The mills are equipped with the very best machinery, and every particle of the timber is utilized in the work. The slabs are worked into pickets, boxing, lath, wainscoting, etc., and the bark and sawdust are used for fuel in generating power for the mills. The construction and mechanical arrangements of the mills make it possible for them to manufacture lumber as cheaply as can be done elsewhere.

The company is now selling lumber as cheap as it can be produced in New York, Pennsylvania, and other places in the East, and cheaper than in Illinois, Iowa, and Nebraska. The quality of the lumber averages sounder, stronger, and better in every respect than Eastern lumber. The company has an investment of over $500,000 in the lumber business in Otero County.

COAL FIELDS.

The matter which first attracted the attention of the Eastern investors to Otero County and induced them to furnish an outlet by rail for its resources was the coal measures of the Salado basin, located 160 miles from El Paso. After a thorough examination of the Salado, White Oaks, and Tularosa plateau coal fields, it was decided that the best coal available was to be found at Salado. There is a great quantity of coal in the White Oaks and Tularosa sections, but the veins are thin and badly disturbed by volcanic action. In the Salado an exceptionally fine quality of coal is found and the veins are thick and the coal intact. Three seams have been opened, two of which are bituminous and coking, 55 and 62 inches thick, respectively, and a third vein of anthracite coal, 40 inches thick. The Salado basin is from 10 to 15 miles wide and the coal measures underlying it are pronounced by experts to be much more regular than the coal fields of Pennsylvania. It is estimated that there is a sufficient quantity of coal there to supply the Southwest market for at least fifty years. Heretofore, coal and coke have been brought to El Paso from distances ranging from 320 to 550 miles, but the building of the El Paso and Northeastern Railway through Otero County places the Salado field within 160 miles of the distributing point, and the haul is practically down grade all the way. The opening of the coal fields means much more than the mere furnishing of cheap fuel to El Paso, for it will also aid materially in developing the precious metals found in Otero County by furnishing mining operators with fuel at a reasonable rate.

PRECIOUS METALS.

The Jarilla mining district is now the most important mineral field in Otero County. Since the railway reached the locality development work has been carried on extensively and now heavy shipments are made from the Nannie Baird, Lucky, and other properties of lesser importance. The gold, copper, silver, and lead ore shipments from that county are of such magnitude that an Eastern company has seen fit to erect a smelter near the El Paso and Northeastern Railway tracks in El Paso, and they confidently figure on drawing their mineral supply principally from Otero County. Recently a rich placer field, 2 miles square in extent, was opened in the Jarilla Mountains, but the workings so far amount to but little on account of the scarcity of water. A number of the miners who are prospectors in the region, have ordered dry washers, and will attempt to work the field as soon as they arrive. Prospecting and development is continuing steadily in the White Mountain, Three Rivers, and Tularosa districts, and many astonishing finds have been made, but the development is not such at this time that the geological conditions of the regions can be dilated on. The railway company reports a constant increase in the ore-shipping business from the county, and positively expects the road to be one of the heaviest mineral-shipping roads in the Southwest as soon as the properties are more thoroughly developed. The railway company is assisting the development of the Jarilla district by offering a rate of $1 per ton on ores running $10 or less and then a graduate freight scale according to value of the ores.

THE WHITE SANDS.

The White Sands Desert, which occupies the extreme western portion of Otero County, is in reality an immense gypsum bed, which will some day form an important item in the wealth of the county. The sand hills resemble huge banks of snow, and on the west of them is found an old lake bed covering 100 square miles area, the bottom of which is composed of layers of crystallized gypsum, some of the crystals being 8 to 10 inches in length. The lake bed deposit for the most part is fibrous and sectile, like mica. The west winds have evidently blown the crystals about for many years, the friction pulverizing them and forming the huge hills on the east. In some places in the lake bed mounds of gypsum, composed of successive layers, are found 15 feet in height, which demonstrates that a bed of gypsum at least 15 feet in depth has been removed by the winds. The sand hills proper vary in size from small mounds to hills 20 feet high, and miniature mountains in ranges and isolated peaks, set off with valleys and canyons, are features of the scene, which is picturesque indeed. There is neither plant nor animal life in the center of the sands, but along the outskirts vegetation flourishes. The constant shifting of the sands kills and prevents plant life from taking root in the desert proper. Along the borders cottonwood trees are found which measure 8 inches in diameter. The soil is very moist, and it is found especially good for the growth of peppermint, large tracts of which are found growing there wild. An analysis of the sands, made at the agricultural college in Las Cruces, gave the following results:

	Per cent.
Gypsum	0.97
Calcium carbonate (lime)	2.68
Magnesium carbonate	.06
Magnesium sulphate	.12
Potassium sulphate	.07
Sodium carbonate	Trace.
Sodium chloride	Trace.

Experiments made with the sands for fertilizing purposes found it to be especially adapted to that use. The plant-growing qualities of the sands is exceptionally good. The experiments at the agricultural college demonstrated that the application of white sand in considerable quantities improved any soil a great deal. In addition to the uses mentioned above, the sands are valuable for the manufacture of plaster of paris and its various by-products. Sulphuric acid, which is largely used in leaching copper ores, can be manufactured from the sands, and with the advantages of cheap power, in consequence of cheap fuel, the great desert 20 miles west of the town of Alamogordo will some day be utilized in commerce and be found a source of great wealth.

RAILWAY ENTERPRISES.

The railway enterprises begun during the past year in Otero County include the El Paso and Northeastern, which is now 160 miles in length and still in progress of construction; the Alamogordo and Sacramento Mountain Railroad, which is completed from Alamogordo to Toboggan, a distance of 20 miles, and a narrow-gauge timber railway from Toboggan up the various canyons of the Sacramento Mountains—about 9 miles in length. The El Paso and Northeastern Railway was built for the coal business of the Salado Basin alone, but various resources never before thought of have been developed with the building of the road, and now it is enjoying a good freight and passenger business. The Alamogordo and Sacramento Mountain Railway shows some of the most intricate work of broad-gauge railway building in the United States. Maximum grades of 5.2 per cent and 30° curves are features of the road. A splendid agricultural and timber country was opened by this road, and the shipping business already demonstrates that the enterprise was justified. In all probability another railroad from Alamogordo to the White Sands, and from thence to the San Andres mining district, will be built as soon as developments in those regions warrant the move.

THE IRON INDUSTRY.

In at least a dozen places along the line of the El Paso and Northeastern Railway, in Otero County, deposits of superior ore, suitable for the manufacture of Bessemer steel, have been found. Cheap coal and coke will place the iron industry of this county on a plane with other localities, and then New Mexico, Texas, and the whole Southwest will be supplied with the home product. The iron ore has been tested at some of the largest steel works in the United States and is shown to be superior to the Colorado product. When the time arrives for the thorough exploitation of the business, New Mexico will find one of her principal industries located in this county.

SCHOOLS OF THE COUNTY.

Since the organization of the county, two different school superintendents have been appointed, but neither would undertake the work of attending to the enumeration of the children or apportionment of school funds, and the matter will not be attended to until the October meeting of the board of county commissioners. Alamogordo has a private school with an average attendance of 75, and the public schools will be established in less than two months. As an evidence of the increase in the number of children of school age in the past year, the Fresnal district (district No. 15) furnishes a startling example. Last year the enumeration of the children in that district showed 29. This year it is 225. The same ratio of increase will be found in every district that is adjacent to the railroad, and in every farming and fruit section and town. Inasmuch as there is no school superintendent to attend to this matter now, it is impossible to give accurate figures relative to the schools.

LABOR SUPPLY.

The labor supply of the county is low. Men for railroad work, timber work in the wood, lumber men for the sawmill, etc., are scarce, and several crews have been imported during the past year from Pennsylvania, Louisiana, Chicago, and other places.

CLIMATIC.

Climatically, the conditions of Otero County are very similar to those existing in other localities of a like altitude in New Mexico. The United States Government has placed the stamp of its approval on the section as desirable for tuberculosis patients by the establishment of a merchant-marine sanitarium at Fort Stanton, on the northern border of the county. The dryness of the atmosphere in the lower country and the lack of precipitation makes it especially desirable for the treatment of that disease.

ALAMOGORDO.

Alamogordo, the county seat of Otero County, has experienced the most remarkable growth of any city in the Territory. Less than two years ago the town was established, and it has to-day over 2,000 inhabitants, broad streets, an excellent assortment of splendid brick storehouses, well stocked with merchandise; three churches, two large sawmills, costing over $200,000; an electric-light plant, ice factory, a water-works system which cost $50,000, railway hospital, and commercial men's club. The general offices of the El Paso and Northeastern Railway are located here, and the company will also erect a roundhouse and machine shops at an early date. The county has the erection of a court-house in view, and fully 20 fine two-story residence houses, costing from $2,000 to $10,000, adorn the place. It is estimated that over half a million dollars has been spent in improvements in the city during the year.

WEALTH AND POPULATION.

The census rolls show a population of about 3,500, and it is constantly increasing. The El Paso and Northeastern Railway is directly responsible for the increase in population, business, and wealth of the county, for the opening of the region has given employment for almost unlimited capital, and a great amount of labor in the timber and mining regions, and has furnished homes for thousands of farmers, stockmen, and people engaged along commercial trade lines. The live-stock, agricultural, and other industries have been increased wonderfully, and the competency and energy displayed in bringing about these results is worthy of the highest commendation.

TULAROSA.

NEAR THE FOOT OF THE WHITE MOUNTAINS, AN IDEAL PLACE FOR HEALTH-SEEKERS, AND A REGION RICH IN AGRICULTURAL, FRUIT, AND MINERAL RESOURCES FOR THE HOME-SEEKER.

A climate which will effect a cure for pulmonary complaints is the one great desideratum for which persons afflicted in that respect have traveled the whole world over. It is generally conceded that a place having a mild and uniform climate, linked with the pure air of a high mountain altitude, is the place which consumptives should seek, and all of these necessary attributes are to be found in Tularosa, Otero County, N. Mex.

This little town, which is in southern New Mexico, is on latitude about 33° north, is situated at the base of the White Mountains, whose highest peak, about 25 miles distant, rises 12,000 feet high, and the town itself has an altitude of 4,000 feet above the level of the sea. It is supplied with water by the Tularosa Creek, which is a mountain stream whose sources consist of several mountain springs containing iron, magnesia, and sulphur, on the reservation of the Mescalero Indians, flowing for about 20 miles through the canyon dividing the White Mountains and the Sacramento ranges. These mountains are covered with pine, fir, juniper, pinon, and balsam fir, all of which endow the atmosphere with a healing balm beneficial to the lungs. The balsam fir furnishes a resin pleasant to the taste and much used among the mountain dwellers for coughs, sore throats, and similar complaints. The temperature ranges from the freezing point to 94° F. This is the record for eighteen years. The thermometer reaches its highest point about the middle of August, when for about two weeks it reaches 94° at noon and remains there until 3 p. m., when it begins to decline, and at night the breeze sets in from the mountains, which renders a blanket necessary before morning. The large number of old cottonwood trees which line the streets of Tularosa furnish dense shade which makes the warmest days pleasant and agreeable. The real winter weather usually lasts from about the 20th of December until the 10th of January, and then ice can be seen in the irrigating ditches from one-eighth to one-quarter of an inch thick, but never strong enough to bear a boy's weight. Tularosa being completely landlocked against the winds on the north and east by mountain ranges and spurs from the main ranges, never experiences those sudden changes of temperature which are so severe on lung troubles.

New Mexico as a fruit region has already been greatly advertised, and the fruit of all kinds raised proves her high standing for fruit culture. Tularosa does not fall behind any other portion of the Territory in the cultivation of apples, peaches, pears, apricots, nectarines, figs, grapes, and wine making from the "Mission" grapes. Apples measuring from 4 to 6 inches in diameter are raised in Tularosa.

The tourist and hunter will find many attractions in the vicinity of Tularosa. The mountain landscape and wonderful "mirage of the desert" to be often seen in Tularosa Valley, are things worth going far to see. Six hours' ride will take the hunter among the wild turkey, black-tailed deer, and cinnamon bear, and a day's drive in a buggy will take the disciple of Walton to where the speckled trout are greedily awaiting the angler's bait.

A large area of the United States public lands is still vacant in the vicinity of Tularosa. That they are rich and fertile is proven fully by the yield of all the lands under cultivation in this section. But irrigation is necessary. Turn water on the land and it will produce anything grown in the temperate zone and many of the products of the Tropics. The mountain streams furnish water in limited quantity only during the dry season, but enough goes to waste and is lost during the winter months to irrigate a country as large as the New England States if it were only stored in reservoirs, where nature has almost provided them—the mountain canyons. Movements are now on foot to effect that object. The mountain ranges near Tularosa contain large deposits of gold, silver, copper, iron, and coal yet undeveloped.

Tularosa is about 100 miles from El Paso, Tex., situated on the El Paso and Northeastern Railroad. The company is constructing a modern two-story depot, with rooms upstairs for the agent. The road is being rapidly pushed on to the Salado coal fields, in Lincoln County. These fields are extensive and a large force of men are now employed on development work. When the road is completed to this point an era of prosperity will follow all along the line, not only in the development of the coal mines, but also the gold, copper, and other minerals, which abound in the region penetrated by this road. There is also an unlimited amount of timber in this region. To those seeking for health, we say come and breathe the dry mountain air of Tularosa, charged with the life-giving ozone, and warmed by a southern sun. To the tourist and pleasure seeker we say, come and hunt the deer, the bear, the wild turkey, and fish in the mountain waters. To the capitalist, we say, come and examine the greatest opportunities for irrigation enterprises which the country affords. As a mineral and mining country, this section is coming to the front, and mining men are coming here almost daily to examine and report on mining propositions. It will only be a short time until the facilities for shipping ores will be good and claims that have not been worked heretofore will be good properties. And to the homeless one who may desire to avail himself of the United States land laws, we say that in the vicinity of Tularosa lies the largest body of unappropriated public land now left out of the almost boundless public domain, subject both to homestead and desert entries. Now is the time for the landless to take advantage of the opportunity offered.

INDIAN RESERVATION TO BE OPENED.

Directly tributary to the El Paso and Northeastern at Three Rivers and Tularosa is the western portion of the Mescalero Indian Reservation which will soon be thrown open for settlement. The bill to that effect has become a law, and the Indians have taken their lands in severalty, so that all that is required now is the final proceedings to its opening.

The western portion of this reservation is well known to be a rich mineral section, the value of which is greatly increased because of its proximity to the railroad. The rich agricultural country to be thrown open will be a revelation to the many hundreds of people who will seek homes there in a short time. With plenty of water and rich, fertile soil, it is destined to become the great farming area of the Southwest.

In regard to the healthfulness of the section, the Government has set its seal upon the climate by establishing a sanitarium for those of its soldiers engaged in the Navy who are afflicted with pulmonary troubles. This will be the great consumption sanitarium of the world, where, it is thought, will be received all who have become afflicted with the dread disease and who desire to try the benefits of a glorious climate combined with the best medical treatment known.

LUMBER DISTRICTS OF THE SACRAMENTO MOUNTAINS IN OTERO COUNTY.

By means of the Alamogordo and Sacramento Mountain Railroad the magnificent forests of pine trees which exist in these mountains are opened up and made easy of access.

The great extent of these forests is such that, even at the present rate with which lumber is being taken from them, many years must elapse before any appreciable diminution in the supply can be detected.

In the heart of this vast forest, upon the summit of the Sacramento Mountains, is situated the noted resort of Cloudcroft, where 2,000 acres of wild woodland, replete with many surprises in the way of scenery and cozy nooks, is set apart as a park, where hundreds of tired people may find rest during the hot summer months in the cool, balmy air of the mountains.

A good dining hall upon the grounds furnishes meals to those who, while camping out, do not care to endure the heat and other vexations connected with cooking.

The Sacramentos can well be called the sportsman's paradise, as they abound in game, such as turkey, grouse, deer, bear, mountain lion, wild-cat, etc.

RIO ARRIBA COUNTY.

Rio Arriba County lies between the counties of Santa Fe, Taos, San Juan, and Bernalillo, and is bounded by the State of Colorado on the north. Its area is about 4,500,000 acres, of which over 2,000,000 are available for farming and pasturing purposes, agriculture and stock raising being the occupation of seven-tenths of the population, which, according to the last official census, is 11,534, although a recent estimate places it at 19,000.

EDUCATION.

The county of Rio Arriba has as many, if not more, public schools than any other county in the Territory of New Mexico, and all are well conducted and largely attended. There are 42 school districts, with an enrollment of over 1,283 pupils and an average attendance of 878 males and 405 females.

The principal towns of this county are Tierra Amarilla, the county seat, with a population of 2,000, a fine court-house, modern-built jail, three good stores, and a branch of the Denver and Rio Grande Railroad. The other principal towns, which are all thriving, are El Rito, Chama, and Monero, the last being a coal-mining town.

Irrigation is practiced wholly, there being no less than 40,000 acres under ditch.

There are two very extensive and exceedingly fertile valleys, the Rio Grande Valley, and the vast strip of land along the Chama River from its source to its junction with the Rio Grande, 3 miles above Espanola. These are the fruit regions of this county, and the water for irrigation of the fruit lands is furnished by the Rio Grande and Chama rivers.

MINING.

The mining industry is also carried on very extensively in Rio Arriba County. Rich galena ore has been found running $40 in silver and 30 per cent in lead within 8 miles of the Denver and Rio Grande Railroad, which railroad crosses the county of Rio Arriba in its northern part from east to west. Gold has been discovered at Tierra Amarilla in good paying quantities; copper and coal very rich has been found in the neighborhood of Abiquiu covering an area of 16,000 acres. There are now three mining districts, i. e., Good Hope, Eureka Gulch, and the Headstone, within the county, which are considered by mining experts equal in rich ores to the famous Creede district of Colorado.

VALUATIONS.

The value of property is $907,176. There are 1,550 head of cattle, valued at $13,002; 127,869 head of sheep, valued at $103,725.85; 1,082 horses, valued at $14,023, and 67 mules, valued at $1,571.

FRUITS.

Fruit of the very finest flavor is grown in this county; is free from defect and is very abundant.

SAN JUAN COUNTY.

San Juan is the northwest corner county of New Mexico, is about 75 miles square, comprises 3,542,000 acres and lies just south of the reservation, bordering its entire length. Aztec is the permanent county seat of San Juan County, and is situated in the center of the great Animas valley, flanked on either side by the fertile valleys of the San Juan and La Plata rivers. It is in the very heart of the greatest fruit belt and richest producing agricultural district in the whole Southwest. It is the central and general distributing point for the mail routes of San Juan County, and the emporium of trade and business for northwestern New Mexico. Its business and professional lines comprise three large general stores, two hotels, one hardware store, two millinery stores, one newspaper, two blacksmith shops, one livery stable, two saloons, one harness shop, one meat market, two attorneys, two physicians.

Aztec has a fine two-story brick school building and a large, commodious church building (Presbyterian). A substantial wagon bridge across the Animas River near town has recently been completed. A roller flour mill of 50 barrels' capacity daily, equipped with modern machinery and operated by a splendid water power obtained from an irrigating canal, is the latest addition to the enterprises of the town. The Territorial government has established an agricultural experimental station at Aztec and has spent about $7,000 on buildings and grounds, and the last legislature made provision for its future maintenance.

WATER SUPPLY.

San Juan County is traversed by three large rivers, which head in the snow-capped mountains of southwestern Colorado, and furnish a never-failing water supply for irrigation, under which system all successful farming is conducted. These rivers are: The San Juan, about 270 feet wide, with an average fall of 11 feet to the mile, and with a mean flow of 3,200 cubic feet per second of time; the Animas, 150 feet wide, with an average fall of 21 feet to the mile, and a mean flow of 2,000 cubic feet; and the La Plata, about 30 feet wide, with an average fall of 40 feet to the mile, and a mean flow of 250 cubic feet.

RESOURCES.

Nature has indeed done much for San Juan County. With a fine and healthful climate, it has thousands and thousands of acres of rich, level, fertile lands, and an everlasting water supply for all purposes. Large and inexhaustible fields of coal, with veins from 4 to 16 feet thick, crop out at the surface.

What makes San Juan County the finest county in New Mexico and the future great country of the Southwest is—

First. One of the finest climates on earth.

Second. Lands as rich and of as wide an extent as any country can boast,

Third. Its everlasting water supply and the ease with which it can be applied to the lands.

Fourth. The capacity of the soil to raise any kinds of crops in enormous quantities and of the finest qualities.

Fifth. The finest fruit-producing country east of California.

Sixth. The fine stock-grazing land of the higher lands and mesas and the close proximity of mountain ranges for stock in summer and the enormous crops of alfalfa hay that can be produced so cheaply for winter feed.

Seventh. The profitable production of live stock, cattle, horses, sheep, hogs, chickens, bees, etc.

COST OF HOMES.

It is estimated that not one-twentieth of the available tillable lands are yet under irrigation and cultivation. Of the lands already under irrigating ditches and subject to immediate irrigation not one-fifth is in use or cultivation. Thousands of acres of rich, fertile land, with perpetual water right, ready for use and cultivation, lying idle and unused, can be bought as raw lands with water rights at from $10 to $15 and $20 per acre, while improved lands with houses and fencing and productive orchards can be bought at from $20 to $25 and $30 per acre, owing to location and improvements. Thousands of acres of rich, level lands lying on the upper valleys and mesas, yet vacant and subject to entry under the public-land laws, can be irrigated with larger canals and ditches to carry the water.

PRODUCTS.

Entering the Animas Valley, in San Juan County, after leaving the Ute Reservation, the visitor sees well-irrigated ranches, with bearing orchards and alfalfa and grain fields of unsurpassed productiveness. Alfalfa yields three and in some cases even four crops per year, and, in addition, furnishes pasturage throughout the winter. Wheat, oats, barley, rye, potatoes, and sugar beets yield as well as in the other most favored regions. Small fruits of all kinds do well, the grape is much more prolific than in the famous California vineyards, while orchard fruits are of superlative quality. The large, sweet cherries commonly sold throughout the country as California cherries thrive here. The pear here finds its most congenial home. The apricot, almond, nectarine, and peach grow to perfection, and the apple, king of fruits, is beyond compare. Almost every farm on down from the reservation line throughout the county has its orchard. The older orchards produced 15,000,000 pounds of apples in 1898, and the quality of the fruit has established for it a recognized place in the great markets of the country. Pear blight, grape rot, apple scab, and the many other enemies and afflictions of fruit culture in the States of the Union are as yet unknown in this favored section.

The pasturage and water supply of the high mesas in the mountains north are ample for the summer range of vast herds and flocks, which in winter are fed on the valley farms. The sheep and cattle interests are already very extensive and are destined to form the basis of the agricultural wealth of the county.

THE OTHER TOWNS.

This article would be incomplete were not some mention, however brief, made of the many other towns and settlements of the county, possessing, as they do, innumerable attractions and a future pregnant with untold possibilities. Chief among these is Farmington. The fame of Farmington as a great fruit-producing center is widespread. The town is situated at the junction of the three rivers, the San Juan, La Plata, and Animas. It has several hundred inhabitants and is constantly and rapidly growing The oldest orchards in the county are located near here. The soil is rich, the improvements many and substantial, and the people progressive to a degree.

Fruitland, Jewett, and Olio are numbered among the growing towns along the lower San Juan River. They are highly thrifty and prosperous and deserve a visit from the intending settler. Cedar Hill, on the Animas near the State line; Flora Vista, also on the Animas, 7 miles below Aztec; Bloomfield and Largo, on the San Juan, and the La Plata settlement along the productive and progressive valley of the La Plata River, complete the list of San Juan's embryo cities.

A WORD TO THE HOME SEEKER.

When you visit the opening of the reservation you may not get what you want. You will find some of the choice land already allotted. You may find other active, energetic people just ahead of you and the most favorable locations gobbled up by the most fortunate land seekers in the scramble for choice locations, but do not get discouraged. You have come to the Southwest to fully investigate. You want to change locations; you may have weak lungs or throat trouble or be suffering from catarrh or rheumatism; you are perhaps from the slow, go-easy, overcrowded East, and you are wanting a vacation among the strange and diversified scenes of the great West; you want a home of your own with rich soil and plenty of water, and one that will produce anything that grows; and you want a change of climate from the hot, sultry summers of the Eastern and Middle States and from the cold, long winters with their many grievances. Do not get discouraged because you may not get what you want on the reservation. It may not suit you; there may be too much mountain and too little valley. Come right on down across the reservation into San Juan County, N. Mex. Come to Aztec, 38 miles south of Durango, where the Animas River basin widens out into a beautiful broad valley with thousands of acres of the most fertile lands. Remember that it is only 10 miles from Aztec across to the great valley of the San Juan River and only 12 miles across west to the beautiful valley of the La Plata. Remember that while we are only 38 miles south of Durango, we are entirely out of the mountains, among the foothills, and in the broad valleys, and more than 1,000 feet lower in altitude.

There is nothing on the reservation that beats our country. We have better land and more of it. We have more water and it is easier handled to irrigate with. We have all the building stone and all the coal and fuel we need. We have a much lower altitude and a better climate. We have big orchards that have been tried and are found fruitful. We have good schools and churches, good society and good people. We have plenty of cheap lands that can be bought on long time at a low rate of interest, and we have just started a great big empire that has more rich natural resources than any other tract of land of its size in the United States. We want more good, industrious people to help us develop its many rich resources and make homes that mean both independence and fortune in the future in the growth and prosperity of this favored country. Do not get discouraged if others are ahead of you in the reservation. Just beyond is the promised land. Just over the border is the famous San Juan. Just down the river is the great Animas Valley that offers the finest homes in the finest climate for the least money, with the best surroundings of any locality in all the great Rocky Mountain region.

SAN MIGUEL COUNTY.

San Miguel County is larger than the State of Massachusetts and has a population half as large as the State of Wyoming. The topography of the county is made up of mountains in the west part, fertile valleys, and broad plateaus, called mesas, in the central and east. It has every diversity of climate, soil, and scenery, and the great diversity of the staple industries is an ample guaranty of the permanent prosperity of all. Here we have mountain, plain, and valley, the basic conditions best adapted to varied and profitable human energy; mines, cattle, and agriculture, three of the great basic industries of the world all combined, constituting an aggregation of producing industries that underlie and are essential to the successful prosecution of all others.

The Rocky Mountain range, which lies across the west end of the county from north to south, is ribbed with gold, silver, iron, copper, lead, and coal, and yet lacking everywhere of being at all generally exploited.

The great plains which lie between the mountain slopes and the valleys of the streams that cut the county in every section are covered with nutritious grasses and are well supplied with water, and are thus made capable of sustaining vast herds of cattle, sheep, and horses. Many of the valleys are limited, it is true, but practically each of them is of sufficient area to accommodate a neighborhood of farms and capable, with intelligent storage, of supplying all with water for all purposes.

The greatest of all needs of San Miguel County is farmers. Of merchants, lawyers, doctors, politicians, middlemen, statesmen, etc., the supply is fully equal to the present demand; but the farmer, the basis of development and the foundation stone and superstructure of all public prosperity, individual, local, State, and national—the man who tills the soil in rational, intelligent, and successful ways—is the man needed here.

The native population of this county are natural sheep men and cattle men, and devote all their attention to these profitable industries. In many instances they have their homes located in rich valleys capable of producing large and paying crops, but at the same time import their corn and flour from the Middle States. In San Miguel County there are valleys with ample water, if intelligently used, to supply with wheat, oats, corn, and hay a population of 200,000 people, yet for a lack of farmers there are on an average of twelve carloads of flour, three of corn, and five of oats shipped into this county per month the year around. This is a natural result of the conditions of our industries. The cattle and sheep men are not producers of hay, grain, and fruits, nor do they even raise garden truck, but they buy oats by the ton, and they buy bacon. garden products, and fruit. The miners who delve for coal, copper, silver, and gold are many, and they buy imported products at good prices.

Our prices for grain, etc., are Kansas prices with freight added. For instance, if oats can be laid down here from Kansas or Nebraska, or anywhere east, at $1 per 100 pounds, $1 per 100 pounds is the price of our oats. So our farmers get the Eastern price with a very high freigh, rate added, and thus our grain, our garden and dairy products are better paying than they are in the Eastern States, and our market is at home. I am unable to obtain statistics of the amount of poultry and dairy products imported into New Mexico each month or year, but the amount is enormous, and I think it is perfectly safe to say that nine-tenths of the poultry, eggs, and butter used in New Mexico comes into the Territory by express, and this is for the sole reason that we have not in this country the farmers or small ranchmen to supply us with these necessities, a golden opportunity it would seem for thrifty Americans who desire to come West and locate in the finest climate on earth.

San Miguel County is the center of the two great industries in New Mexico, cattle and sheep raising. Of the 20,000,000 pounds of wool produced annually in New Mexico, 4,000,000 pounds are grown and 8,000,000 pounds are marketed in San Miguel County. This county is also the headquarters of a majority of the cattle men of the Territory. In Las Vegas, the county seat of this county, are located three large wool-scouring plants, each with a capacity of 2,500,000 pounds of wool per year. This home demand for wool is the secret of the good market of this product in Las Vegas.

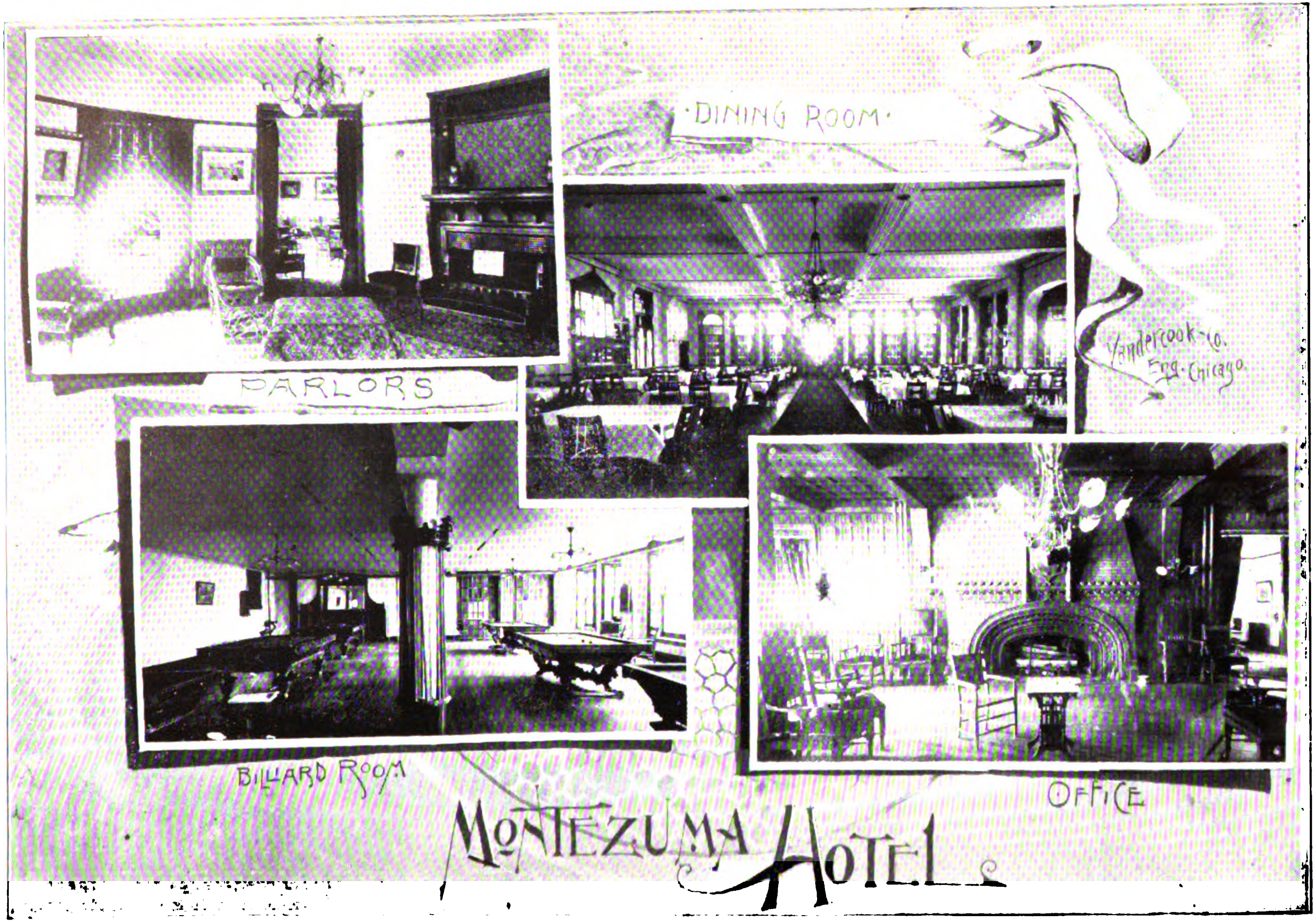
The Atchison, Topeka and Santa Fe Railroad has 100 miles of track in San Miguel County, and the division headquarters is located in Las Vegas, where the monthly pay roll exceeds $30,000. This road has also a branch line running from Las Vegas to the Las Vegas Hot Springs, where upward of $1,000,000 have been spent in hotels, bath house, and other improvements. It is here that the celebrated Montezuma Hotel is located, said to be the finest resort hotel between Chicago and San Francisco.

San Miguel County is known as the empire county of New Mexico. No combination of circumstances has yet been found powerful enough to direct the wholesale trade of the Territory from its natural center—Las Vegas. The largest wholesale houses in the southwest are located here, while having branches at Albuquerque, Socorro, and other points. Trade for Las Vegas comes by rail and wagon. It comes from the counties of Mora, Colfax, Taos, Santa Fe, Chaves, Lincoln, Valencia, and Socorro, there being more freight unloaded in Las Vegas and more loaded out than in any other city in New Mexico. This is certainly a good and true index of the business done.

Las Vegas, the county seat of San Miguel County and the commercial center of the Territory, has a population of 10,000 people, about equally divided between natives and Americans. In the way of public buildings it has a city hall, five public-school buildings, court-house, Masonic temple, opera house, Territorial normal school, Territorial insane asylum (of red and white cut sandstone), an academy, seminary, Jesuit college, convent school, Presbyterian mission school, Methodist manual-training school, Christian Brothers' institute, and a kindergarten. Two schools of music are also added to her educational facilities.

Las Vegas has two daily and five weekly newspapers, three banks, two building and loan associations, three hotels and many boarding houses, nine churches, a number of clubs, and all the leading civic and social societies, a roller flour mill, capacity, 50 barrels a day; a manufactory of mineral and carbonated waters, two wagon and carriage factories, a saddle and harness factory, electric-light plant, three planing mills, two cigar manufactories, and many other enterprises of less importance.

There are eight wholesale houses, whose trade extends throughout the Territory, while this volume of trade and the value of stocks they carry can not be duplicated west of Kansas City and south of Denver.



AT LAS VEGAS HOT SPRINGS.

An evidence of the healthy growth of Las Vegas can be had from the fact that not less than fifteen new commercial enterprises have been opened here in the past six months.

Respectfully yours,

W. C. Reid.

Hon. Miguel A. Otero,
Governor of New Mexico, Santa Fe, N. Mex.

CLIMATOTHERAPY AT LAS VEGAS HOT SPRINGS.

A remarkable combination of natural advantages of a health-giving nature exists in and about Las Vegas Hot Springs. Its location in this regard is peculiar. Situated in the northern portion of the county, it lies on the southern slope of the Canadian Valley, the course of whose waters, differing from that of either of the other valleys of the Territory, is directed toward the Mississippi. The main range of the Rockies forms the western boundary of this valley. A limb of the Rockies extends at about right angles east and west along the Colorado and New Mexico boundary line. The Raton Range is a part of this limb, some peaks of which are 8,000 feet in height. This high western and northern barrier protects the valley in question from the severe storms which arise in the great Northwest, and hence materially modifies the climate which exists within this basin. The protection of Las Vegas Hot Springs is also materially enhanced by the fact that it lies at the western entrance of the Gallinas Canyon, the high hills of the latter forming almost a complete circle about it. The range of hills forming this canyon farther west become mountains of considerable magnitude. All are covered with a heavy growth of yellow pine, pinon, and cedar trees, together with minor vegetation. There is no sufficient dust or sand upon these hills and mountains in condition to be disturbed by winds; hence, at Las Vegas Hot Springs sandstorms are unknown. Its distance from any center of population is such that it is undisturbed by the dust of streets. Through the Gallinas Canyon flows a small river by the same name, and in its immediate vicinity, close to the edge of the stream above referred to, within a confined area, the soil is penetrated from an unknown depth by some thirty hot mineral springs. Within the same field whence arise these springs lies an extensive peat bed, an antiseptic decomposition of vegetable matter, invaluable as a medicinal agent.

If one will study the atlas of 1894 by the Weather Bureau department of the Government, compiled from all the reports of the Weather Bureau stations from the organization of each to the end of 1891, he will observe that Las Vegas Hot Springs is in the center of what is known as the "dry belt of the West." This dry belt, with an irregular, constantly varying outline, extends north and south from the northern part of Texas through Mexico and into Colorado. Following the monthly charts in the atlas above referred to, one will observe that in January the storm line is the farthest away from him, extending about midway between longitude 95° and 100°. The general monthly precipitation throughout this area does not, then, exceed an inch. In February the storm line is seen to approach a little farther west; in March still farther. It is the rule that the western edge of the storm line has reached central New Mexico and Las Vegas Hot Springs in June. This storm line begins to recede in September; by October it has passed out of New Mexico on its eastern course, and the precipitation has again been reduced to a monthly average of only 1 inch. It is noticeable, then, that this dry belt has a rainy season, during which time a large portion of the average annual precipitation falls. It is observable in studying this storm line that north of the Raton Range, which is the northern boundary of the Canadian basin, it is greater. The storm line more quickly reaches Colorado and more slowly disappears from it. According to these Government reports, the average annual precipitation at Las Vegas Hot Springs is 12 to 14 inches, most of which falls during the summer months. It is further observed that there are few, if any, habitable portions of the United States having an average annual precipitation of less than above. That there should be some precipitation must be recognized as essential to life and comfort.

A study of the latitude of Las Vegas Hot Springs is interesting in this connection. Its latitude is 35½°, the same that exists in the northern part of Africa, including Morocco, Algeria, and Tunis, and also in the northern part of Arabia, portions of the world known to be extraordinarily dry.

While the location of Las Vegas Hot Springs is so favorable as regards its minimum amount of precipitation, it has not the high temperature that is generally found upon such latitude. This is explainable by its position in regard to the Rockies and its altitude, it being 6,767 feet above sea level. It is generally known that the impression prevails among people who have read of this place, but who have not personally visited the same, that because of its southern position the summers are extremely warm; because of its altitude the winters are severe. Life at the springs convinces one that the opposite is true. The southern position, added to the fact that a spur of the Rockies extends east from the main range along the Colorado border, protects it mainly from the northwestern storms and modifies the temperature of the winter months, so that in truth it is usually mild and delightful. The intensity of summer heat prevalent in southern latitudes does not exist in this location, because of the great altitude. It is thus seen that Las Vegas Hot Springs, together with other portions of New Mexico, has a favorable all year round climate.

The springs, the peat, the freedom from dust and heavy winds, the forests of pine and cedar, the natural scenery, the opportunities for out-of-door life, render this place, in particular, especially favorable for such people as are in quest of health. The medicinal value of the springs has been long recognized; their constituents are generally of the saline element. They vary, however, to a considerable degree, sulphur predominating in one, iron in another, lithia in another, sulphureted hydrogen gas in another; free carbonic-acid gas exists in most of them. They are of unquestionable value in numerous affections peculiarly favorable for their use, either external, internal, or both. The temperature of the hottest is 144° F.; most of the springs range in temperature from 122° to 138°. Combined with the peat in about equal proportions, a union is formed inestimable in certain diseases when prescribed in the form of baths.

All these facilities tend to make of Las Vegas Hot Springs what it is endeavoring to become—a health resort upon an extensive scale. It invites pleasure seekers as well as invalids; those who desire a rest from overwork and those who desire recuperation from some long illness. Its climate must be recognized as most favorable for such as have contracted incipient tuberculosis; those who wish to escape the affections due to a heated term of the lower altitudes; those who wish to escape the rigors of winter; those who wish to avoid suffering from hay fever; its waters invite such as are affected with diseases generally benefited by hot mineral springs. Its sanitation is perfect. Malaria does not exist; sunshine predominates, thus encouraging out-door life and sports of all kinds; therefore to the pleasure seeker as well as to the invalid Las Vegas hot springs offers attractions unsurpassed in the West, and is the property of the Atchison, Topeka and Santa Fe Railroad System, which system has erected numerous buildings at a great cost for the convenience of visitors, and the work of improvement is still progressing. The main building, named the "Montezuma," is a large structure of sandstone, beautifully situated on a commanding eminence overlooking the picturesque Gallinas Canyon, as it opens out toward the rolling meadows, which meadows give the name to the town of Las Vegas, 6 miles distant. From the broad verandas, extending the entire length of the front, east, and west sides of this building, a delightful view is obtained; on the one hand are mountains with their massive shoulders outlined against the skies; in front the little hurrying Gallinas River rushes along filling the air with the distant murmurs of its waters; in another direction the valley is seen to stretch far out to the horizon; little Mexican villages with their adobe houses are scattered on both sides of the stream. In many respects the surrounding country reminds one of Switzerland, and to those fond of tramps and excursions among the mountains it offers an endless variety. Another building just completed is a hospital for the care of those invalids who need quiet and such attention as can not be given in the Montezuma. The bath house and the peat house are prepared for such as require treatment there. Numerous cottages scattered about the plant, along the confines of a large park, are held in readiness for those who desire home life. The Springs Branch of the Santa Fe Railroad affords constant and easy communication with Las Vegas, where it connects with all through trains on the Santa Fe route.

There are other springs and artesian wells near to Las Vegas besides those at the Las Vegas hot springs; the two most celebrated are the Macbeth mineral wells, owned by Peter Roth, and the Onava alterative water springs, owned by Charles Wright; the first, the Macbeth well, is an artesian well of a depth of 338 feet, geologically speaking, in the lower part or bottom of the Jurassic formation and immediately over the Triassic formation, the Triassic forming the bed and bank of this ancient extinct Jurassic sea by curving from under to an anti-incline or uplift at this immediate location. The salts in the water are derived from a bed of seaweeds formed on the coast of this ancient extinct sea by a leaching through the ashes of the decomposed marine plant for ages, extracting therefrom a natural mineral which analysis shows to be a pure sodium or trisodium compound of salts from the algæ and fucus marina, namely, in proportion of sodium chloride, 35 grains; sodium carbonate, 9 grains; sodium sulphate, 1 grain; or 45 grains to each quart of water. These are the principal ingredients or elements of the salts found in the Macbeth mineral water. The water is absolutely free from the other alkalies, such as lime and magnesia, which renders all waters hard and unfit for drinking purposes. It is a most pleasant and palatable mineral water to the taste, and to which the most fastidious do not object; really a beverage after becoming accustomed to it. The trisodium compound is a solvent of mucus in catarrh of the stomach and biliary ducts, also solvents of albumen in the urine and found in Bright's disease of the kidneys; it also corrects the acidity of the blood, of the stomach and urine, such as lactic acid, uric acid, and lithiæma found in dyspeptics and disordered intestinal digestion, and is necessarily indicated in the rheumatic or gouty diathesis, gastric catarrh, dysentery, constipation, albuminuria or Bright's disease, and of the skin. It aids and promotes the appetite, stimulates the secretions, is antiacid, an eliminant, a diuretic, and a laxative.

Macbeth mineral water is not only known at home, but each week thousands of gallons are shipped abroad.

Onava alterative water, a sulphureted, carbonated, mineral water, incomparable as a system cleaner, blood purifier, and appetizer, is found at a depth of 250 feet, and has a chemical analysis in grains per gallon as follows:

Sodium chloride	3.009
Sodium carbonate	3.807
Sodium bicarbonate	49.356
Potassium sulphide	4.933
Iron sulphide	.503
Silica	.419

Some remarkable cures have been effected by this water, and while Mr. Wright does not make any pretensions at running a sanitarium, there are always from three to a dozen health seekers at his ranch, a few miles from town, who are there for the benefit of the curative qualities of Onava alterative water.

SANTA FE COUNTY.

The county of Santa Fe does not occupy as conspicuously large a place upon the map as some of the other principal subdivisions of imperial New Mexico; but owing to the rare charm attaching to its history, and that of the unique political capital whence it derives its name, its peerless scenic and climatic attractions, and its rich and diversified resources, it naturally takes first rank in interest among its sister counties.

It is the central county of the Territory; is rectangular in form, extends south a distance of 72 miles from the thirty-sixth degree of latitude, and measures 30 miles from east to west; embraces a total area of 1,498,600 acres, of which 975,000 are officially pronounced available for cultivation and pasturage, while thousands of the roughest mountain acres are clothed with fine timber and ribbed with valuable mineral-bearing veins. It is crossed from east to west by the great transcontinental railroad of the Atchison, Topeka and Santa Fe Company, which operates over 70 miles of road in the county, and is tapped from the north by the New Mexico division of the Denver and Rio Grande Railroad, which extends from Espanola to Santa Fe, or 38 miles in the county. Excellent wagon roads also reach all the towns and settlements.

From the summit of Mount Baldy the surface of the county presents a vivid and magnificent panorama of mountains, mesas, and valleys, with numerous streams of limpid water rushing down huge mountain shoulders, over precipices and massive bowlders, into deep and narrow gorges and widening valleys, flashing in the sunlight like ribbons of silver, in their hurried and heedless race to the Rio Grande on the west, and with the lofty mountain peaks of southern and northern New Mexico and even Colorado swimming in the blue air of the dreamy distance. The main range of the Rockies on the east and the Valles and Jemez mountains beyond the Rio Grande on the west shelter this favored locality from violent winds and render the climate remarkably mild and equable considering that the altitude of the valleys varies from 5,500 to 7,500 feet above sea level. Doubtless this circumstance, together with the fertility of the soil, excellence of the water, plenitude of timber, and the many marked manifestations of rich veins and deposits of gold and silver bearing material a few miles south, prompted the intrepid Spanish explorers to locate a permanent colony and mission at Santa Fe, or the City of the Holy Faith of Saint Francis, as early as 1605. The wisdom of this selection has been plentifully demonstrated during the nearly four centuries that have since melted into the past. With the exception of the twelve years following the bloody and transiently successful revolt of the Pueblo Indians in 1680, Santa Fe has ever since been recognized as one of the most important outposts of civilization and commerce in the southwestern world, being continuously the political and military capital of this region under both Spanish and Mexican rule, and, having witnessed the frontier line of the United States carried thousands of miles out into the Pacific Ocean, still maintains its supremacy as the capital city of New Mexico, the county seat of Santa Fe County, and the most delightful residence city in the Rocky Mountains.

MATERIAL RESOURCES.

The assessed valuation of the real and personal property of Santa Fe County for the current year, excluding the large amount exempt from taxation under the law, aggregates $1,768,150.68, of which Santa Fe's share is placed at $338,155.10. There are about 500,000 acres of public land in the county, subject to entry at Government prices, and 557,880 acres more are included in Spanish and Mexican grants, the titles of which are purchasable at low rates and on easy terms. It may be added further that the county affords about 475,000 acres of good grazing land, partly covered with timber, and about 500,000 acres of arable land, 200,000 acres of which could be irrigated. In the absence of exact data, the land actually being cultivated by means of irrigation is conservatively estimated at 25,000 acres, while probably 20,000 acres more are yearly planted to crops subject to the chances of enough rain in the growing season to mature them. Wherever the valley and mesa lands of the county have been brought under the magic influence of systematic irrigation the results have uniformly proved most satisfactory, and naturally this stimulates enterprise annually to enlarge and extend existing irrigating systems and thus gradually increase the number of acres that can be depended upon to yield regular profits.

This is notably true of the Espanola Valley, in the northern part of the county. Plentifully watered by the Rio Grande and its tributaries, the Chama, Santa Clara, and Santa Cruz, this beautiful valley is now most of it under cultivation and evidences of contentment and prosperity are noted on every hand. The acreage of wheat, corn, oats, beans, and kindred crops increases each year. Alfalfa yields three and sometimes four crops per year. Sugar beets, carrying a very high percentage of saccharine matter, can be readily grown there. The orchards of apple, peach, pear, plum, prune, cherry, apricot, and nectarine trees have for several years been large and regular shippers of the choicest fruits of the earth, and their vigorous and thrifty appearance gives cheering and aromatic promise of multiplying profits in the future. All kinds of small fruits, including strawberries, raspberries, blackberries, and currants flourish.

Several extensive vegetable gardens, where lettuce, radishes, onions, asparagus, green pease, sweet corn, beets, tomatoes, celery, parsnips, and other table luxuries are raised in great profusion and perfection for the mountain markets of northern New Mexico and southern Colorado, have not only proved to be constant bread winners, but surplus producers. So far as productive qualities are concerned, these remarks may be applied to nearly all of the irrigable and arable lands of the county, particularly the Santa Fe, Tesuque, and Nambe valleys.

The distinguished and lamented Archbishop Lamy introduced the culture of choice fruits, flowers, and vegetables into Santa Fe and elsewhere in New Mexico about fifty years ago. The good man lived long enough to witness the complete success of his experiment and personally taste the rare flavor of its luscious results. It was soon found that all the most desirable varieties of temperate zone fruits, including the largest and finest flavored French cherries, could be grown here in perfection and in quantities only limited by the extent of land and available water supply; that the soil and sunshine of Santa Fe would produce roses rivaling those of France and Italy in beauty and fragrance, and that the conditions were peculiarly favorable to the cultivation of all kinds of edible vegetables. It thus happens that the orchards and gardens in and about the capital city are not only veritable beauty spots, either when blushing with sweet prophecies of better things to come or burdened with matured and mellow fruitage, but provide many families with the comforts of life. Some of these orchards and gardens are irrigated from ancient acequias taken out of the Rio Santa Fe, and others are watered direct from the mains of the local water company.

POSSIBILITIES OF IRRIGATION.

The extent of land so far devoted to the twin arts of agriculture and horticulture is comparatively small, because the natural flow of water in the mountain streams is not sufficient during dry seasons to justify taking out much longer or larger irrigating ditches. These streams carry immense volumes of flood water during the months of February, March, and April, when the snow is melting in the high altitudes and the spring rains are in progress, and again become rushing torrents during the heavy rains of July and August; but, coming from precipitous heights and pouring into expanding valleys and plains below, their invaluable surplus is soon absorbed by the porous soil or drank up by the thirsty air. So, during the months of May and June, when most needed for irrigation purposes, the supply of water is smallest. The remedy is obvious. Wisely located storage reservoirs, like those in southern California or in southwestern New Mexico, capable of holding until needed the flood waters of winter, spring, and midsummer, would render it possible to reclaim and make fruitful thousands of acres of as good land as any now under cultivation in the county.

Careful observations in the canyon show that Santa Fe Creek has a flow of 80 acre-feet per day during the months of February, March, and April; that the rainfall in Santa Fe during July and August varies from 2.50 to 3.50 inches, while in the mountains and canyons composing the watershed of the creek and embracing an area of about 50 miles the rainfall during these two months is not less than 6 inches; that the rainfall in September sometimes amounts to nearly 3 inches; and that after the irrigation season closes, or during the months of November, December, and January, there is always surplus water. In the light of these facts, after making liberal deductions for evaporation and seepage, competent hydraulic engineers reach the conclusion that the storage of the flood or waste waters of the Santa Fe would reclaim and render valuable from 20,000 to 25,000 acres that are now arid and practically worthless.

The Nambe, with numerous natural storage basins along its course, carries three or four times as much water as the Santa Fe, and hence is capable of reclaiming fully 60,000 acres. The Tesuque has about the same, and the Galisteo about half the flow of the Santa Fe.

The surplus waters of the four streams named could be conveniently stored and distributed over the Santa Fe plains as needed, and it will be perceived that, without taking into account the Rio Grande, their combined capacity would be sufficient to reclaim over 100,000 acres in addition to the lands they are now watering. These lands can be secured at Government prices, or on most favorable terms of private owners, and considering that their soil is as fertile and easily tilled and only requires water to become as fruitful as lands in the Espanola Valley that annually yield excellent returns and are held at from $30 to $300 per acre, the thoughtful reader will be able to form an approximate notion of the large direct and indirect benefits that would flow from the proposed system of storage reservoirs. It would not only richly reward the capital and energy invested in constructive work, but would prove a blessing to many deserving men by affording them much coveted opportunities to gain good homes and comfortable incomes in this almost ideal climate. Ten faithfully and intelligently cultivated acres, one half planted to the varieties of fruits that flourish so well at Santa Fe and in the Espanola and Tesuque valleys, and the other half devoted to the culture of table vegetables, would furnish ample occupation and support for a family. The small fruits and vegetables would pay well from the very start, while the trees would begin to bear fruit in three or four years. Celery of superior quality, possessing in a high degree the delicious nutty flavor so much prized by epicures, readily grows here, and might be made a source of large and constant profits. Acres of asparagus, cabbage, cauliflower, onions, oyster plant, and parsnips would reward industry. Experiments prove that sugar beets, grading higher in sugar content than those of California and Nebraska, readily grow here, and will be raised on a large scale as soon as the eyes of capital are opened to the wisdom of erecting factories at Santa Fe for their reduction. Fields of alfalfa, wheat, oats, and corn would pay. Irrigated lands are unfailing crop producers. The rapid and successful development of the Cochiti, south Santa Fe County, and other near-by mining districts, with the certainty that the number of consumers there will soon be multiplied to thousands, guarantees the best possible market for all that these lands could produce. What an inviting field for the establishment of colonies. What tempting and unsurpassed opportunities are thus presented to the many invalids who are seeking and finding fresh health and vigor under the benign influences of the almost perpetual sunshine and the pure, dry, rarified air of a region over which skies of the softest blue tenderly bend, as if bestowing a special blessing.

In consequence of the large shipments of cattle and sheep during the past few years, the extensive areas of fine grazing land are not nearly as well stocked as they should be. According to the books of the assessor, the live stock in the county is classified as follows: Horses, 1,741; cattle, 1,906; sheep, 48,310; goats, 3,793; mules and burros, 510. Clearly the field for stock growers is full of invitation. The experiment of raising goats on a large scale, chiefly for the sake of their pelts, has been undertaken.

MINING—PAST, PRESENT, AND PROSPECTIVE.

In marked contrast with the prolific orchards, fields, meadows, and gardens of the northern valleys and mesas, but even more important and interesting, are the gold, silver, copper, lead, iron, zinc, and turquoise bearing mountains and hills about Cerrillos, Dolores, Golden, and San Pedro, and the great anthracite and bituminous coal measures at Madrid, in the southern part of the county. Unquestionably the gold found in the locality indicated was one of the principal reasons why the Spaniards took such desperate chances to plant and maintain colonies in this county centuries ago. They extensively worked the famous old and new placers at Dolores and Golden two or three hundred years ago, rescuing therefrom several million dollars' worth of gold, mainly by means of the labor of enslaved Pueblo Indians and the rudest possible methods, even obtaining scanty supplies of water by melting snow with heated rocks; and their descendants are still working these inexhaustible deposits of pay gravel by means of "dry washers." Much of the gold is quite coarse. Years ago a nugget was found near Dolores that yielded about $400, and after heavy rains nuggets worth several dollars each are often picked up. Except for the absence of water the stream of gold from these fields would be immense and continuous. Modern skill and enterprise have partly solved the problem by the agency of deep wells and powerful steam pumps, and can be relied upon finally to achieve success in a much larger degree. Artesian-well experiments have so far failed, but confidence is entertained that ultimately an artesian-well flow will be secured. The lodes in the surrounding hills, whence the placer deposits undoubtedly crumbled and washed down, are of inestimable value. Indeed, the range of mountains extending from Dolores south about 8 miles is virtually one vast upheaval of mineralized matter. Cunningham and several other hills of the range are veritable mountains of ore of high enough grade to warrant the belief that the whole mass will be worked when the requisite facilities are introduced.

Some of these lodes were developed to the extent of hundreds of feet many years ago, and there are evidences that much mineral was extracted. It is estimated that gold to the value of $5,000,000 was taken out of the old workings of the Ortiz mine, and the wealth of several of the prominent native families of the Territory can be traced to this source. This mine is now being systematically worked and its free milling output treated at a plant on the ground. In the same vicinity is the Benton mine, from one pocket of which $60,000 worth of ore was mined in a few months some years ago. Adequate reduction works near at hand are needed to make this and other lodes in the Ortiz Mountains steady producers.

At Golden, a few miles south in the same range, are found numerous lodes of gold and silver bearing ore, as well as blanket deposits of lead and iron carbonates that carry both of the precious metals. Several of these lodes are undergoing systematic development, which promises rich results. Tests at small local plants prove that most of the ores will readily yield their values in Huntington mills. Two miles farther south are the great San Pedro copper mines, showing large bodies of copper ore which pay handsomely at the smelter near by. Owing to litigation the mines mentioned were not worked for several years, but are now being operated under competent management, and both mining and reduction facilities are being increased as rapidly as possible.

Large bodies of silver-bearing lead and zinc ore have been opened at Cerrillos, but the low price of silver and other causes have prevented their being worked during recent years. The workings of the Cash Entry mine are very extensive, and it is understood that great bodies of ore are disclosed that would pay well at the present prices of silver and lead. The large bodies of iron, zinc, and lime will, some day, be in demand. A fine, modern smelter of 80-tons capacity occupies a prominent and desirable site at Cerrillos, but has not yet been blown in.

At Turquesa, a few miles north of Cerrillos, are located the celebrated Tiffany turquoise mines, from which thousands of dollars' worth of magnificent gems have been extracted and shipped to New York. Experts pronounce them superior in purity, luster, and enduring sky-blue color to any produced in the world, surpassing the turquoise of Persia in the exact tint desired. Garnets of rare beauty are also found in the county.

Much prospecting is going on in the mountains near the city of Santa Fe, and some fine-looking specimens of copper, iron, and mica have been brought in, but not enough work has been done to determine whether valuable bodies of mineral have been found.

COAL MEASURES AT MADRID.

The coal measures at Madrid, just south of Cerrillos, show three distinct veins from 5 to 10 feet thick, extending for miles, and are pronounced practically inexhaustible. The output of these veins is remarkably varied, including soft, free coking, noncoking bituminous, semianthracite, and anthracite, and in places natural coke is found. The intimate association of bituminous and anthracite veins appearing in alternate strata in the same mine is a phenomenon not observed elsewhere, and one that deeply interests geologists. Purely practical people, however, are contented with the knowledge that the veins contain enough for many generations to come, and that it is nearly all of superior quality. The mines are operated by the Cerrillos Coal Railroad Company, whose tracks reach the workings, give employment to 554 men, and produce annually about 250,000 tons of coal, worth about $450,000. The anthracite mine produced 25,000 tons, worth $100,000, last year. The company also operates a large coke-making plant near the mines, and finds a ready market for its product at the different Territorial smelters and at El Paso. Right here it may be added that the construction of a mammoth electric plant, for the purpose of generating and transmitting power to operate the Albemarle mine and mill in the Cochiti mining district, is now in operation at Madrid, where the vast accumulation of slack affords unlimited quantities of cheap fuel.

SANTA FE.

The historic city of Santa Fe, seat of the government of the Territory of New Mexico and the county of Santa Fe, enjoys the distinction of being the oldest town and the oldest capital on the American continent. Its permanent settlement by Europeans antedates the founding of Jamestown and also the landing of the Pilgrim Fathers at Plymouth more than twenty years. The thrilling and romantic incidents composing its story, the protracted and bloody struggles with hordes of savage Indians, the capture and pillage by hostile Pueblos in 1680, the general massacre of missionaries and explorers and flight of the governor and a few followers in the night to El Paso, the reserving of some of the handsomest Spanish maidens for wives of favored warriors, the desecration and destruction of the Christian churches and the restoration of the worship of snakes and stone idols, the reconquest by Diego de Vargas twelve years later, the terrible punishment visited upon the rebellious Pueblos, the change from Spanish rule to the rule of the triumphant Republic of Mexico, the capture by the United States forces under General Kearney and the building of Old Fort Marcy in 1846, the stirring scenes accompanying the distribution of the immense traffic of the Santa Fe trail, the wild deeds of desperadoes and the fabulous hazards at cards in the days before the advent of the railroad, afford the material for an epic poem of deep interest.

Here, so carefully preserved that the marks of its three hundred and one years of age are perceptible, is located the noted "Adobe Palace," which was the official residence of the Spanish and Mexican governors, and since the Mexican war has been the headquarters of all the Territorial governors and secretaries appointed by the different Presidents of the United States. Here is situated the oldest house standing on American soil, and near by is the San Miguel church, first built in 1540 and still used as a regular place of worship. Here stand the beautiful and imposing new capitol building, the massive modern cathedral of St. Francis, the large and enduring stone Federal building, the modern penitentiary of the land, San Miguel College, Loretto Convent, St. Katherine and the United States Indian schools, the New Mexico Industrial School for the Deaf, Dumb, and Blind; Presbyterian, Episcopal, and Methodist churches; the large brick Presbyterian mission school, besides many fine modern business blocks and private residences. Here side by side are object lessons whereby the civilization of the seventeenth and eighteenth centuries can be studied in contrast with that of the present day as nowhere else in America.

Environed by protecting hills and thus exempt from heavy winds, surrounded by enchanting natural scenery, beautified by orchards and gardens of flowers, blessed with a climate that is free from extremes of heat and cold, and air that is pure and tonic; supplied with an abundance of pure water for domestic and irrigating purposes from the extensive storage reservoir in the mouth of Santa Fe Canyon; furnished with competing rail, express, and telegraph communication with all outside points; the headquarters of all the Federal and Territorial officials; the meeting place of the legislature, the supreme court, the United States Court of Private Land Claims, the United States and Territorial district courts, and the various Territorial boards; the home of the archbishop of New Mexico, Arizona, and Colorado; putting in a modern sewerage system, and preparing to build large new schoolhouses up to he highest standard of excellence, Santa Fe is naturally forging to the front as a popular residence city.

The waterworks are located about 2 miles up the Rio Santa Fe, cost about $300,000, and consist of a large reservoir or artificial lake secured by means of a semicircular dam across the canyon—600 feet long, 350 feet thick where securely tied to berrock, and 120 feet high—with mains and service pipes extending to every part of the city. A smaller reservoir on the hillside supplies the power required to operate the city's electric-light plant. The present population is about 8,000.

Cerrillos is the principal trading point in the southern, and Espanola in the northern section of the county. As has been shown in previous parts of this review, both have splendid resources, both are flourishing and progressing, like all parts of the county; both are yearly building large business houses and better private residences; both have good schools and several churches, and both are clearly destined to grow in business and population.

Among the substantial improvements at Cerrillos may be mentioned a handsome stone schoolhouse, while an idea of the trade of Espanola may be gained from the fact that one general store there annually sells goods to the amount of about $150,000.

Possessing material resources unrivalled in value and variety, and surrounded by exceptionally favorable natural conditions, the people of Santa Fe County are enjoying a prosperous present and contemplating the future with unbounded confidence.

WOMAN'S BOARD OF TRADE.

The woman's board of trade of Santa Fe has very recently passed its seventh anniversary. The founder of this organization is Mrs. Cora L. Bartlett, wife of the present solicitor-general of the Territory of New Mexico.

The object of the organization is to advance every interest pertaining to the welfare and prosperity of the "oldest city in the United States." This body is regularly incorporated under the laws of the Territory of New Mexico. The standing committees for work are, finance, library, visiting and relief, intelligence, improvement, industrial house, woman's exchange, prevention of cruelty to animals, reception and education, press, and cemetery.

The public plaza is entirely under the direction of the Woman's Board of Trade of this city, and the city of Santa Fe appropriates $200 per year towards its support. A free public library of over 1,200 volumes and a free reading room, with all the leading magazines and papers, are open to the public.

A half, or pauper rate, is granted this board by both the Atchison, Topeka and Santa Fe Railroad and the Denver and Rio Grande Railroad companies, and with the fiscal year ending June 30 there have been 36 half-rate tickets granted. It also owns a pauper burial ground for the benefit of those too poor to purchase lots.

The visiting and relief work is the most important of all its branches, as hundreds are given relief in one way or another every year.

The cemetery committee which has had charge of Fairview since May 1 has expended $166 cash, besides donations of labor, lumber, water, etc.

The board owns 25 shares of stock in the fruit evaporating company, its object being to assist in establishing and promoting any worthy enterprise.

The treasurer's report up to June 30, 1900, shows balance on hand at that date of $243.10; total receipts from all sources, $1,428.64; total expenditures from this amount for all purposes, including $200 by cemetery committee, $1,185.54.

The woman's board of trade prides itself on the businesslike way in which its affairs are conducted, as well as its meetings. Its membership remains about the same (31 members) and unlimited. Every progressive woman in Santa Fe should be a member of this board, granted, of course, that she be willing and is so situated that most of her time can be given to work for the public.

The officers for the year 1900 are as follows: President, Mrs. R. J. Palen; vice-presidents, Mrs. T. P. Gable, Mrs. Creighton, and Mrs. M. J. Warner; recording secretary, Mrs. Anita Chapman; corresponding secretary, Mrs. Charles Bishop; treasurer, Miss Alice Atkinson.

The special work of this year has been the placing of a handsome drinking fountain in the Plaza and a drinking trough at a convenient corner, for animals.

EARLY HISTORY.

In 1541, when Coronado passed through the then unexplored country in search of the fabled Seven Cities of Cibola, he found an Indian pueblo or town already established upon the spot where the city of Santa Fe now stands. It was undoubtedly a place of much importance among the tribes who occupied the country at that time, as Coronado estimated the population at 15,000 souls. The many natural advantages of the location early attracted the attention of the Spanish settlers, and about the year 1600, perhaps sooner, it became a permanent Spanish town and the seat of government for that part of New Spain which was ceded to the United States in 1848.

On August 8, 1680, the Pueblo Indians, under the leadership of Pope, a Taos Indian, revolted against the Spanish and began a war of extermination on the invaders. So successful were they in the uprising that on August 21 of the same year the Spaniards were compelled to evacuate the town and retreat to a point near what is now the city of El Paso, Tex. So soon as the Spanish were gone Santa Fe was partially destroyed by fire. The churches and monastery were burned save the adobe walls, the official documents furnished fuel for a huge bonfire in the plaza, and as far as possible all evidences of the Christian religion were wiped out.

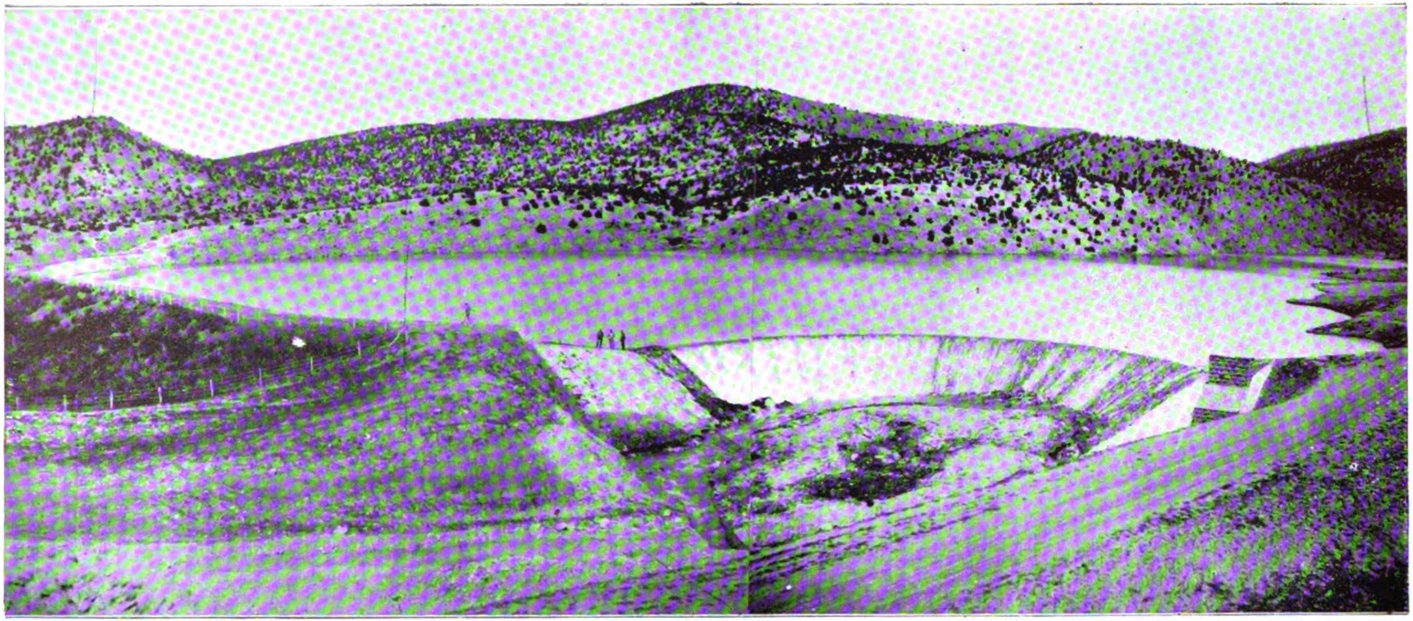
Santa Fe, and in fact the whole land, remained in possession of the Indians until September 13, 1692, when Don Diego de Vargas Zapata Lujan, at the head of 80 mounted Spaniards and 100 friendly Indians, after a battle of eleven hours, defeated the Pueblos and regained possession. After that memorable fight the Spanish maintained their supremacy in New Mexico until August 18, 1846, when Colonel Kearny, at the head of a detachment of United States troops, entered Santa Fe and took possession of it in the name of the United States. It is impossible to here go into details of the history of the city before or after the American occupation, interesting as it is, but in the light of that history no other city in the entire country is so rich in tradition and in historic events as this ancient city of the Spaniards.

PLACES OF INTEREST.

To enumerate all the places of interest in Santa Fe would require entirely too much space for the purposes of this brief sketch, but a few of the most important are:

The Territorial library, containing the ancient Spanish and Mexican archives from 1621 to 1846.

San Miguel Church, built in 1540, partially destroyed in the revolution in 1680, reoccupied in 1692, and completely restored in 1710. This is the oldest church in the United States and contains many relics of the early days.



Reservoir of Santa Fe Water Company.

The old house, believed to antedate the Spanish occupation.

The Cathedral of San Francisco, behind which is the chancel of the old parish church, with a carved and painted reredos, both curious and interesting, erected by Governor Del Valle and his wife in 1761.

The cathedral museum, containing many Spanish paintings and other objects of interest.

The Territorial historical rooms, full of antiquities of historic interest.

Old Fort Marcy, the commanding situation famous in all the sieges of the city; ruins of the old fort built by Colonel Kearny in 1846.

The garita, on the road to old Fort Marcy, by the west wall of which the leaders of the revolution of 1837 were executed.

The plaza in the center of the town, around which cluster many memories of the conquest of the land by the hardy Spaniards and of the stirring scenes of more recent days. The soldiers' monument is located in the center of this park.

The Church of Our Lady of Guadalupe, with its large and interesting altar piece on canvas, containing six pictures of the appearance of the Virgin to Juan Diego, and other paintings and wood carvings.

Monument to Kit Carson in front of the Federal building.

The Rosario Chapel, erected on the spot where De Vargas made his vow before the surrender of the city in 1692.

The most interesting of all the buildings is, without doubt, the governor's palace, an adobe structure built in 1598 and continuously occupied by the Spanish, Mexican, and American governors for three hundred years. The men who have lived and conducted the affairs of state in the old pile included some of the foremost names of the land, not only of the Territory but of the Eastern States.

To quote from the words of Ex-Governor Prince, author of the most authentic and complete history of New Mexico extant:

> Without disparaging the importance of any of the cherished historical localities of the East, it may be truthfully said that this ancient palace surpasses in historic interest and value any other place or object in the United States. It antedates the settlement of Jamestown by nine years and that of Plymouth by twenty-two, and has stood during the two hundred and ninety-nine years since its erection, not as a cold rock or monument, with no claim upon the interest of humanity except the bare fact of its continued existence, but as the living center of everything of historic importance in the Southwest. Through all that long period, whether under Spanish, Pueblo, Mexican, or American control, it has been the seat of power and authority. Whether the ruler was called viceroy, captain-general, political chief, department commander, or governor, and whether he presided over a kingdom, a province, a department, or a Territory, this has been his official residence.
>
> From here Onate started, in 1599, on his adventurous expedition to the eastern plains; here, seven years later, 800 Indians came from far-off Quivirato to ask aid in their war with the Axtaos; from here, in 1618, Vicente de Salivar set forth to the Moqui country, only to be turned back by rumors of the giants to be encountered; and from here Peñalosa and his brilliant troop started on the 6th of March, 1662, on their marvelous expedition to the Missouri; in one of the strong rooms the commissary-general of the inquisition was imprisoned a few years later by the same Peñalosa; within its walls, fortified as if for a siege, the bravest of the Spaniards were massed in the revolution of 1680; here, on the 19th day of August of that year, was given the order to execute 47 Pueblo prisoners in the plaza which faces the building; here, but a day later, was the sad war council held which determined on the evacuation of the city; here was the scene of the triumph of the Pueblo chieftains as they ordered the destruction of the Spanish archives and the church ornaments in one grand conflagration; here De Vargas, on September 14, 1692, after the eleven hours' combat of the preceding day, gave thanks to the Virgin Mary, to whose aid he attributed his triumphant capture of the city; here, more than a century later, on March 3, 1807, Lieutenant Pike was brought before Governor Alencaster as an invader of Spanish soil; here, in 1822,

the Mexican standard, with its eagle and cactus, was raised in token that New Mexico was no longer a dependency of Spain; from here, on the 6th day of August, 1837, Governor Perez started to subdue the insurrection in the north, only to return two days later and to meet his death on the 9th near Agua Fria; here, on the succeeding day, Jose Gonzales, a Pueblo Indian of Taos, was installed as governor of New Mexico, soon after to be executed by order of Armijo; here, in the principal reception room, on August 12, 1846, Captain Cooke, the American envoy, was received by Governor Armijo and sent back with a message of defiance; and here, five days later, General Kearny took formal possession of the city, and slept, after his long, weary march, on the carpeted earthen floor of the palace.

Coming down to more modern times, it may be added that here Gen. Lew Wallace wrote Ben-Hur, while governor of the Territory, in 1879 and 1880.

SIERRA COUNTY.

There has been a remarkable and gratifying development of the two principal industries of this county during the past two years, and latest reports prove that in both stock-raising and mining interests this progress is in full tide.

Though small in area, Sierra County contains a large proportion of rich pasture lands, and the cattle interests are perhaps the most uniformly prosperous. At present there are upon the various ranges 130,000 head of cattle, 100,000 sheep and goats, and some 16,000 horses. About one-tenth of the cattle is owned by the Las Animas Cattle Company, the remainder being well divided between a great many smaller ones. The profits of the industry remain with and redound to the benefit of the community.

In agriculture there has been little progress. About 6,500 acres are under cultivation out of some 300,000 acres of good, arable land that could be brought under ditch without too great expenditure. The farmers are prosperous and find a ready market for their entire product in the mining camps and at the cattle ranches. The prices they get would excite the envy of a Kansas farmer: Hay, $12 to $16 per ton; grain, 1 to 1½ cents per pound; potatoes, 2 to 2½ cents per pound; apples, 2 to 5 cents per pound. The product of the farms does not near supply the needs of the towns and ranches, and the merchants get their largest supply from Kansas, Colorado, and California.

POPULATION.

The population of the county is between 5,000 and 5,500, and is composed of two-thirds American miners and settlers and the remainder of the native Spanish-American people. There are no Indian residents within 150 miles, and those only a miserable remnant, kept strictly upon an Arizona reservation. The native Mexicans are a peaceable, frugal, and industrious race, and they afford an increasing source of cheap labor in mine and field.

PUBLIC SCHOOLS.

Excellent schools are maintained in seventeen school districts, under the supervision of the county school superintendent. Eight to ten months of the year are devoted to the education of children, and the teachers selected are of the very best character. The school fund has always been cherished, and commodious, substantial, and handsome schoolhouses have been built and are building. In all departments of primary education the school system of Sierra County will bear comparison with communities otherwise far more advanced.

CLIMATE.

It is not too much to say of this land of sunshine that there exists a perpetual summer. There is but just enough of cold in the months of November and December to mark the change from summer to winter, while a fall of snow is rare, and at most does not remain upon the ground more than a few days. In the higher portions of the mountain ranges some snow is, doubtless, preserved during the colder months, and serves to maintain the summer streams. With such a winter temperature it might be expected that a very high thermometer would rule in summer, but such is not the case. From 90° to 95° in the shade is the greatest heat recorded, and from 20 to 30 below freezing point the most severe cold. The altitude—4,000 to 5,000 feet—of the main portions of the region will account for these moderate extremes. In such a climate mining operations are pursued to the greatest possible advantage, and agriculture aided by irrigation has no drawbacks. The devastations of snowslides and blizzards are here unknown, and the same may be said of pneumonia, that scourge of the miners in the North.

THE SANTA FE RAILROAD.

The Atchison, Topeka and Santa Fe Railroad passes through Sierra County, like the river, from north to south. Its distributing points are at Lake Valley for the south and at Engel for the east, from whence well-equipped stage and freight lines penetrate to the different towns and villages of the county. The Santa Fe directory has done much to develop the resources and aid in the growth of this section by granting low rates of transportation on ores to the great smelting points of Colorado, and of Kansas City, Socorro, N. Mex., and El Paso, Tex. For the 740 miles from Lake Valley to Pueblo and Denver the rate is but $5.80 per ton. Some important branches and extensions are contemplated to penetrate to the most remote mining camps of this region, and it is the aim of the directory to foster and sustain, to the extent of its power, the rapid growth of the mining industry. An immediate improvement is the extension of the Lake Valley branch to Hillsboro, the county seat, which will bring the road within 12 miles of the most distant mines in the southern half of the county.

WAGON ROADS.

The roads are of good grade, well-maintained repair, and conduct through the most important districts and reach the more notable mines. Roads from the agricultural lands enable the farmers to sell their produce in the markets of the mining towns, where they obtain prices really remunerative.

LABOR AND WAGES.

Miners earn $3 and $3.50 per day; laborers $1.50 to $2.50. Most of the labor is performed by the native people, and of these there has been, with the growth of the mining industry, and from the neighboring lands of Texas and Mexico, a steady and sufficient immigration. Skilled miners from the North are constantly arriving, and so far no difficulty on the score of help has been experienced.

LUMBER, TIMBER, AND FUEL.

Sawmills located in the canyon valleys of the Black Range supply the needed lumber for buildings and use in mines, and an ample supply is kept on hand in the lumber yards of the different towns at an average price of 3 cents per foot. Heavy mining timbers for supports are delivered at the mines for from 4 to 8 cents per running foot, according to locality and proximity to timber. Fuel wood is delivered in the towns at $4 per cord. The use of coal is increasing, and with the extension of the railroad to Hillsboro will become the universal fuel for all manufacturing purposes.

MERCANTILE SUPPLIES.

In the principal towns of Hillsboro and Kingston very large stocks of merchandise are carried, and prices will compare favorably with any other known mining districts. Smaller but complete stocks are also carried in the lesser towns of Chloride and Lake Valley, and some convenient stores are to be found where towns have not yet sprung up, but where there is mining, and supplies are needed. The Sierra County Bank at Hillsboro and the Percha Bank at Kingston supply the needed facilities of financial exchange and accommodation.

MILLS AND SMELTERS.

The building of ore-reduction works has kept pace with the production of the mines. Amalgamation and concentration works both are now crowded to their utmost capacity, and an enlargement in this direction must soon be made. Two smelters, or rather matte furnaces, have been erected and operated during the past year, and in this field a large expansion is probable and expected. Water supply for mills has been obtained during the dryest seasons known in the history of New Mexico, and by the aid of some engineering the available supply can be greatly increased.

HILLSBORO.

Hillsboro at the center of the gold district is still the leading town of the county of Sierra. The mines maintain a regular output, and several new ones have been brought into prominence during the past year. Principal among those may be mentioned the Trippe mine owned by a Pennsylvania company. Three shafts have been sunk on this mine, and levels opened to a depth of 300 feet. A mill has been built and is in constant operation, handling 20 tons of ore per day, and turning out bullion and concentrates to the value of $10,000 per month. The mine is also shipping to the smelters a nearly equal value of first-class ore, from $60 to $100 in value per ton. Near the mill and around the post-office store a little town is springing up called Andrews, after Senator Andrews, the president of the company. Of the older mines the Richmond, the Wicks, and the Snake group maintain this position and keep in employment from 100 to 150 men. Other mines are being worked under lease or by their owners, but in the aggregate contributing considerably to the total output of the camp. The building of ore-reduction works and the introduction of improved machinery have kept pace with the production of the mines. Amalgamation and concentration works are now crowded to their utmost capacity, and an enlargement in this direction must soon be made. About $500,000 is the estimated output of this camp for 1899. The Hillsboro ores carry from 3 to 20 per cent of copper, and the great rise of this metal is almost as much to the miners as the rise in beef values has been to the cattlemen. From 60 cents per unit in 1895 to the present $2.85 is a big jump, but it is founded on true scarcity and demand, and therefore likely to be well maintained.

Among the silver camps now recovering from the long depression and again getting to work at mining for what there is in it, Hermosa has been making some great records of happy results and strikes by leasers and small owners. A pocket of ore in that district means thousands of dollars to the finder. The most remarkable thing in silver this year, however, has been at the Lookout mine on Trujillo Creek, the last carload of ore netting the lessees and owners $11,000. With three chutes of this ore opened and actively working, this mine is likely to make a big sensation before long.

Other mines in this county are also producing very rich ore, and there is a general feeling of renewed confidence in silver mining. At the old and once famous camp of Kingston there is also a noticeable revival of mining and increase of production. A new reduction mill built there by a Detroit company is successfully handling large quantities of low-grade ore, and the product is a great addition to the resources of the camp.

Lake Valley is also waking up and doing some mining for rich ore, and for the valuable fluxing ores peculiar to that camp. In the Caballo Mountains copper has been found in paying quantities and under circumstances that indicate permanence. Several good miners are in the district, and much may be expected from this source. Altogether the people of Sierra County are well and profitably occupied, and are as self-supporting and independent a community as can be found anywhere.

Colonies of from ten to twenty families with small capital, say from $1,000 to $2,000 each, could make excellent locations in this county. The land is cheap and the titles are good, and there is a great demand at all times for agricultural products.

Sierra County enjoys the distinction of being out of debt. Its warrants are maintained at par, its resources varied, its people energetic and hopeful, and its outlook for the future bright. It is situated in the south central part of the Territory. Its area is about 2,376 square miles. The county lies principally in the Rio Grande watershed, which river traverses its entire length, taking up in its course hundreds of lesser bodies of water, which will serve as an important factor in making agriculture and horticulture the leading industries of this section.

WARM SPRINGS.

The warm springs, in the valley between Hillsboro and the mines, are provided with a commodious bath house, swimming and private baths, and are a great source of health and pleasure to the miners, who attend in great numbers at least once a week. The water is just comfortably warm, and the baths are in constant use the year round.

At Las Palomas, on the Rio Grande, and at Ojo Caliente, north of Grafton, are extensive hot springs and noted health resorts.

HON. W. H. ANDREWS'S PROPERTY.

The most extensive mining property in the Hillsboro district is that operated by Hon. W. H. Andrews, of Pittsburg, Pa., under the name of the Philadelphia Mining and Milling Company. Senator Andrews entered the field of mining in New Mexico in 1897. He purchased and bonded a large number of claims in the Hillsboro district, and after thoroughly prospecting each one selected those best adapted to his purpose and relinquished the balance. Those retained were the El Oro, Golden Rule, Golden Courier, Bona, Little Stanley, Mignon, Corona, Satisfaction, Trippe, Hillsboro, and Homestake.

After the selection had been made preparations were immediately begun for the construction of a mill. To determine what process was best adapted, several tons of ore were shipped to Denver, Colo., and a thorough test of the various processes for the extraction of gold was made, and the Paletin-Clerici cyanide process was accepted. A plant capable of handling 50 tons per day was constructed on the El Oro claim. The process was eminently satisfactory at first, but the character of the ore changed, and it was found necessary on this account to discard the cyanide process entirely and replace it by ordinary amalgamation and concentration, the Whifley concentrating table being used for the latter operation. The difficulty with the cyanide process lay in the fact that the ore handled was very heavy in iron. After it was crushed to 60 mesh and delivered to the cyanide tanks it was there agitated for a period of about nine hours, the coarse gold settling of its own weight, the fine gold being dissolved and precipitated on quicksilver (which covered a copper plate) by electricity. The agitation acted as a concentrator, and the iron settled over the quicksilver to a depth of several inches, thus preventing a greater extraction than from 45 to 52 per cent, while by amalgamation and concentration an extraction of from 80 to 92 per cent is secured.

Operations have been confined mostly to the Trippe mine. The work on this claim consists of three shafts, which have been sunk to a depth of 300, 120, and 50 feet, respectively. From the 300-foot shaft levels have been run at 50, 150, and 250 feet. From the 120-foot shaft a level has been run to connect with the 150-foot level from the 300-foot shaft, thus insuring an abundant supply of air. In all these openings ore is to be found. What is known as the low-grade ore—that running below $40—is run through the mill and concentrated, the concentrates being shipped to the smelter. Of this character of ore there is a large body, varying in width from 1 to 3 feet. The high-grade ore—that running over $40—is stacked and shipped direct to the smelter. This ore, varying in width from 6 to 18 inches, is found on all the levels. The richest body of ore is found in the 250-foot level. In width it varies from 14 to 18 inches, and is found for a distance of 100 feet (at which time this report is made), and assays $1,630 per ton. Every indication points to the continuation of this body of ore, and should it continue it will make the Trippe the largest gold producer in New Mexico. The ore is hoisted from this mine by a Fairbanks & Morse gasoline hoist on the 300-foot shaft and whims on the other two. These whims will be replaced by gasoline hoists in the near future.

Situated on the El Oro are the company's buildings, which consist of a hotel, store, corral capable of stabling 30 head of horses, the senator's private residence, and the bunk house. The latter has just been completed, and is unique in its arrangements. Every employee is supplied with an iron bedstead, mattress and pillow. There are reading and toilet rooms, the former supplied with the latest periodicals and newspapers, and the latter with towels, soap, etc. Each occupant is assessed 10 cents per week, which defrays the expenses of the janitor and subscriptions to the magazines and newspapers. All the buildings are substantial and comfortable.

The improvements under way and contemplated are a schoolhouse, which may be used on Sundays for religious services, an electric plant, capable of furnishing power for 400 16-candlepower incandescent lights and 10 arc lights, and the enlargement of the corral.

John I. Thomson is general manager for the company and Peter Townsend the mine foreman.

SOCORRO COUNTY.

Socorro County is situated in the central portion of New Mexico, between the thirty-third and thirty-fifth parallels; is bounded on the north by Valencia County; on the south by the counties of Grant, Sierra, Otero, and Donna Ana; on the east by the counties of Lincoln and Otero, and on the west by the Territory of Arizona.

This is at present the largest county in New Mexico, containing approximately 10,000,000 acres of land, consisting of agricultural, grazing, mineral, coal, timber, and saline lands.

Under the present facilities for irrigation about 1,000,000 acres are available for agricultural purposes. Vast areas of excellent land for agricultural purposes are found on the east of the Rio Grande, extending from the eastern slope of the Serros del Pueblito, San Pedro, and Fra Cristoval mountains to the western slope of the Oscura, Burro, and San Andres mountains, covering an area of from 15 to 25 miles in width and 40 to 50 miles in length, the greater part of which might be reclaimed by means of a system of reservoirs for the storage of water. Equally large areas of as fine land as the sun ever shone on is found west of the Magdalena Mountains, in the valley situated between the Datil Mountains on the north and the San Mateo Mountains on the south, a large portion of which might also be reclaimed by means of storage reservoirs.

Estimated population, 19,000, of which approximately two-thirds are native born.

The following are a few of the principal points of importance in the county, to wit: Socorro, San Marcial, Magdalena, San Antonio, Kelly, Mogollon, Cooney, Graham, Alma, Frisco, Gila, Mangus, Luna, Sabinal, Lemitar, San Acacia, Polvadera, La Joya, and Paraje, of which Socorro, commonly known as the "Gem City," is the county seat and headquarters for the fifth judicial district, comprising the counties of Socorro, Lincoln, Chaves, and Eddy. Socorro has a population of 3,000 inhabitants, and is beautifully situated on a slight elevation or tablelands immediately adjacent to the Rio Grande Valley about 2 miles west of the river, at the base of the Socorro Mountains. The city owns and controls its own waterworks, the supply of which is acquired from the Socorro Mountain springs, about a mile above the city, and at an elevation sufficient to furnish any pressure that may be required for any and all purposes. Analysis of the water demonstrates the fact that the same is chemically pure. Principal resources are farming, fruit raising, mining, manufacture of brick, cattle and sheep raising. Climate excellent; is the headquarters for the furnishing of supplies to a large area of country tributary thereto. (The Socorro brickworks have the reputation of producing the best quality of building and fire brick in the West.) Socorro has two banks, three flourishing flouring mills, two weekly newspapers.

SAN MARCIAL.

San Marcial is also situated in the Rio Grande Valley, about 28 miles south of Socorro, and is a stirring, enterprising, up-to-date town of 1,500 inhabitants; division point of the Atchison, Topeka and Santa Fe Railway Company, and where the railway company repair shops and roundhouses are located; also a hotel; is headquarters for the furnishing of supplies to an extensive area of country tributary thereto, including the neighboring towns of Val Verde, Contadero, Old San Marcial, Cantarecio, Paraje, and Rosedale mining district. A modern flouring mill, owned by J. N. Broyles, is in operation day and night; one weekly newspaper, one bank. Principal resources are cattle, sheep, mining, fruit raising, and farming.

MAGDALENA.

Situated about 27 miles from Socorro is Magdalena, which is the terminal of the Magdalena Branch, operated by the Atchison, Topeka and Santa Fe Railway Company, and is one of the principal points in the county for the shipment of cattle and sheep, shipments of cattle for the year ending August 25, 1899, amounting to 24,387 head. Has a population of about 700 inhabitants. Principal resources are mining, smelting of ores, cattle, and sheep. Is headquarters for the furnishing of supplies to towns and ranches tributary thereto for a distance of 300 miles, including Springerville, Ariz. A 100-ton smelter, owned and managed by Capt. A. B. Fitch, is in operation day and night, and from the product of which has been shipped during the year ending August 25, 1899, 1,225,152 pounds of bullion. Amount of ore shipped during the same period, 1,020,000 pounds. At the present time new and important discoveries have been made in the Magdalena mining district, which will very materially increase the product from this place.

SAN ANTONIO.

San Antonio is situated 10 miles south of Socorro, in the Rio Grande Valley, along the main line of the Atchison, Topeka and Santa Fe Railway; has a population of 1,000 inhabitants within a radius of 2 miles; has three large general merchandise stores. Occupation and principal resources are farming, fruit raising, freighting, coal mining, cattle and sheep.

Eight miles east of San Antonio are situated the Carthage coal fields, owned and operated by Hilton & Co., of San Antonio. The coal vein is 5 feet thick, and of a superior quality for steam and coking purposes. It is hauled by means of wagon transportation to the railroad at San Antonio for shipment. This place is also the headquarters for furnishing and forwarding supplies to towns and ranches east of the Rio Grande, including the town of Whiteoaks. The valley lands are very fertile and considered as good as any in the valley, a portion of which from experiments have been found to be especially adapted to the culture of canaigre root and sugar beet. The Bosque del Apache grant is situated 3 miles south of San Antonio, and contains something over 12,000 acres of choice valley land, which at present is not under cultivation, but would furnish an excellent opportunity for capital desiring to engage in the culture of sugar beet and the refining of sugar. Similar opportunities can be found at various places along the Rio Grande Valley; in fact, choice lands suitable for the culture of sugar beet can be found adjacent to any of the above-named towns in the valley. Water supply for irrigation purposes is derived from the Rio Grande through the medium of community irrigation ditches.

MOGOLLON.

This is one of the oldest mining camps in the county, having been discovered in 1879. Has several producing and dividend-paying mines. Population about 750.

FRISCO.

Frisco is situated in the western portion of the county, on the Frisco River. Principle resources are farming and stock raising. Population about 500.

MINES AND MINING DISTRICTS.

The following are a few of the principal mines and mining districts in the county: Cooney district, a portion of the Black Range district, Dry Creek district, Sullivan's Hole district, Cat Mountain district, White Water district, Iron Mountain district, Magdalena district, Socorro mining district, Lemitar district, Kelly mining district, Rosedale mining district, Water Canyon mining district, Ladrones mining district, La Joya mining district, Oscura mining district, Hansonburg mining district, Burro mining district, San Andres mining district.

In the Cooney district are located and in operation several mines, stamp mills, etc., the Cooney mine or Silver Bar having a production of several hundred thousand dollars. Character of ore: Gold, silver, and copper, a portion of which is saved on the plates and the balance by concentration. The Queen, owned by a Galveston company, has considerable development and also a modern 10-stamp mill, amalgamation process.

The Florida group, owned by W. J. Weatherby, has several hundred feet of development; a gold free-milling proposition; pay-ore streak ranging from 18 inches to 3 feet in width; values, $20 and upward. A splendid opportunity for the investment of capital.

The Little Fannie mine, situated about one-half mile from the town of Mogollon, has produced thousands of dollars; is considered one of the best paying mines in the district; has attained a depth of something over 300 feet. Character of ore, milling. Values saved by amalgamation. Pay ore from 5 to 20 feet thick; values, $15 to $40, saving about 75 per cent.

Maud S, situated in the town of Mogollon, has produced $675,000; has a 10-stamp mill. Attained a depth of 375 feet below creek level. Pay-ore streak, 18 inches to 3 feet. Values saved by amalgamation and milling process.

Eberle mine, situated in Mogollon, is one of the best propositions in the camp, has several hundred feet of development, and is reported to have sufficient ore in sight to run a 50-stamp mill for a term of five years. The property has been in litigation for several years, during which time the owner has been constantly developing with a view to erect necessary machinery thereon for the reduction of ores, which will probably be executed in the near future.

Last Chance mine, situated in the Last Chance gulch, one-half mile from the town of Mogollon, has produced $160,000, has a 15-stamp mill, and was recently sold to English capitalists. Is working day and night and reported to bid fairly well toward becoming one of the heaviest producers in the camp. The vein is immense, varying in width from 10 to 30 feet; average value about $10, some of the ore running up into the hundreds.

Deep Down mine, situated on opposite side of the canyon to the Maud S, on the same lead, has a 5-stamp mill, has produced $65,000, and has a bright future.

The Confidence mine, one of the largest and most fully developed properties of the camp, has an estimated output of something over $1,000,000; has a 30-stamp mill run by water power; has attained a depth of over 700 feet. The mill is situated on White Water.

Black Range district. About one-half of this district is situated in Socorro County, the balance in Sierra County. The ores of the Black Range district are high grade, as has been fully demonstrated in the past by shipments heretofore made. A ton sample shipped from the Iffie group gave returns of $211, of which $180 was in gold. An average of 10 samples from the same property, taken by a conservative mining expert, gave returns showing average values of 6⅔ ounces gold and 90 ounces silver.

The Great Republic group is also situated in this district, and upon careful examination demonstrates the fact that it is capable of becoming one of the heavy producers of this region.

The Ivanhoe has also produced some very rich ore.

The Silver Monument, at the head of Chloride Creek, has a production record of something over $100,000. South of Chloride Creek is the United States Treasury mine, showing an ore body of 20 feet at the 100-foot level, averaging $10 per ton in gold.

South of Hagan's Peak are the Colossal and Midnight, the former having produced $70,000. Another one of the heavy producers is the Readjuster, a copper and gold proposition, owned and controlled by Gen. Quinby Vance. Immense deposits of iron ore, from 50 to 500 feet in width and running from 58 to 65 per cent iron, are found in different portions of the district, and many other properties equally meritorious. This district will some day in the near future be the Cripple Creek of New Mexico, the possibilities of which are far greater than the expectations of even the most sanguine friends of the district.

Dry Creek district is situated in western Socorro County, about 15 miles from the town of Mogollon. Rich copper and lead ores have been found in the district, one of the promising prospects being owned by Dan Bechtol; also "tellurium ores," running up into the thousands. The district is in need of development. There is an abundance of running water. There are also some very promising gold prospects owned and controlled by Mr. Bachellor and associates, of Graham, N. Mex. With development the district has a promising future in store.

Sullivan's Hole district is situated in the San Mateo range, and some very promising gold claims have been located and some mining done. The district, however, is in need of development and would furnish a good field for prospectors and capital. Nearest railroad station is Magdalena.

Cat Mountain district is situated about 10 miles from Magdalena, and is systematically one of the largest free-milling gold propositions in New Mexico. The property is equipped with a steam-hoisting plant, and shows 25,000 tons of ore in sight that will mill $10 per ton above the 100-foot level. Below the 100-foot level the ore body is increasing in size and value as depth is attained. There are other promising prospects that might do equally as well with development.

Rosedale mining district is situated about 40 miles west of San Marcial in the San Mateo Mountains. The character of the ore is gold. One of the principal producers is the property operated by the Martin Company, which has paid handsome dividends to the stockholders for some time and is daily becoming more valuable with development. Another promising property is a gold proposition owned and operated by the Hanna Bros. & Bell, of San Marcial. Values in this district seem to increase with depth. The ore is mostly free milling, the tailings being saved by concentration, or might be treated with cyanide.

Iron Mountain district is situated 6 to 10 miles north of Cat Mountain. Nearest railroad station is Magdalena. This district is undeveloped. Has several promising prospects, showing values in gold, silver, and lead.

Magdalena district is situated adjacent to Magdalena. Gold, silver, and lead properties have been successfully worked for several years. Lead carbonates are found in many of the mines in paying quantities. North end of the district is principally gold.

Kelly mining district is situated immediately south of and adjoining the Magdalena district. In the district is situated the town of Kelly, a prosperous mining town. Nearest railroad station is Magdalena, only 3 miles distant. The Kelly district is one of the oldest in the county, and has probably produced more values than any other district in the county. The ores are principally lead carbonates and galena; there are also one or two promising copper properties. One of the principal copper propositions is operated and owned by Walter Cook. The "Graphic" mine is situated in this district, and has been producing ore and paying dividends for the past fifteen years. The property is now being operated under the efficient management of Capt. A. B. Fitch, and is reliably reported as doing better than at any time in its history. Captain Fitch is also operating, in connection with the mine, a hundred smelter. Perhaps the most forcible testimony as to the worth of this property is the fact that during the cloudy days of 1894 and 1895, when lead sold as low as $2.40, the smelter and mine hardly ever lost a shift. The lead carbonates carry some gold and silver, averaging from $2 to $10 per ton.

The "Kelly" mine is situated south of the "Graphic" and has produced thousands of dollars. The mine is at present operated under a lease and ore is being steadily shipped.

"The Juanita" is another good lead property, but is not being worked at the present time on account of being in litigation, is a splendid property, and will be one of the heavy producers as soon as the litigation is settled.

East of Kelly is found the "Hard Scrabble," which has a good production record. South of Kelly are found the "Mary" group, also the "Imperial;" next the "Young America," the last named having shipped considerable ore, the values being found in carbonates running from 30 to 60 per cent lead, and also some silver and gold.

Adjoining the "Graphic" is found a promising lead prospect owned by C. C. Clark, of Kelly. In the immediate vicinity is also found the "Ambrosia," "Yellow Rose of Texas," operated or owned by A. D. Coon, of Socorro, and numerous other prospects which would no doubt be equally meritorious with necessary development.

The Water Canyon mining district is still in its infancy, although prospecting has been carried on for some time. Ores: Gold, silver, lead, and copper. One of the principal properties is the Timber Peak, situated near Six Mile. The same is being operated under the direction of Richard Sanders, of Philadelphia. This is an enormous vein, in fact, a mountain, of low-grade gold ore. Values saved by concentration. The company have recently erected a large mill at an approximate cost of $50,000 for the purpose of reducing the ores. Values are found in iron sulphides. In Water Canyon, about 4 miles from the Timber Peak, is found the "Buckeye," operated by the Buckeye Gold and Copper Company, nearly all of the stockholders of which are residents of the Territory. The values are principally gold and copper. The ores are sulphides and oxides of copper. In this property water level was encountered 125 feet below the surface. The values of the ore are very materially increasing with depth, the character also changing at water level from a decomposed, honey-combed quartz to a copper sulphide, the ore shute from which shipments are being made so far as uncovered ranging from 2 to 5 feet in thickness. This property has also an immense vein of low-grade ore that would pay to treat on the ground. Formation: Lime and porphyry, hanging-wall lime, foot-wall quartzite. The property is equipped with up-to-date steam hoists, mine pumps, etc., and under the efficient management of the president of the company, Mr. C. T. Brown, and Lee Terry, mine foreman, the property is expected to become in the near future one of the heavy producers of the district.

In Copper Canyon, a few miles distant, is found the Driscoll property. This is a gold proposition and one of the most promising in the district. It has an immense contact vein of low-grade milling ore. Negotiations are in progress with Eastern capitalists for the purchase of the property. This proposition certainly affords an encouraging field for capital seeking investment. There is an abundance of water and an ideal mill site. The property is owned by Dr. Driscoll, of Socorro.

Beyond Dark Canyon in the same district are found a number of paying lead properties, one of the principal mines being owned and operated by Col. W. S. Williams, of Socorro. This mine is known as the "Bell," and at the present time is making regular shipments. The ore is galena, running from 30 to 65 per cent; also carries from $2 to $20 in silver and gold. In the same canyon and district adjacent to the Bell is found another valuable lead property, owned by Mr. Mitchell. The property is being worked under a bond and lease, and has been shipping continually during the past three months; character of ore the same as the Bell. There are numerous other valuable and encouraging prospects that with development will prove to be steady producers. The Water Canyon district is situated 15 miles southwest of Socorro, and is considered by mining men to be one of the best fields for investment in the Territory. As above stated, the district is in its infancy, but all developments so far made have been very satisfactory. The veins seem to be permanent and values universally increase with depth. Abundance of water and timber for mining purposes.

Socorro mining district is situated immediately west and adjacent to Socorro. Character of ore: Gold and silver. This district is also one of the old districts in the county, and has a production record exceeding $1,000,000. The "Torrence," a silver proposition, is not being worked at present, and has large bodies of low-grade silver ore; principal values, silver. Next to the "Torrence" is the "Merritt," owned by a corporation, the principal stockholder of which is A. D.

Coon, of Socorro. This property has an immense body of milling ore (silver) that will average under the present price of silver about $9 per ton. Farther up the mountain is the "Glasson property," a gold proposition, from which some very rich ore has been extracted. This property is considered by mining men to be a very promising proposition. It is owned and worked by Mr. Glasson, of Socorro.

Lemitar district is undeveloped. Ores are copper and lead. Some very good lead carbonate ores have been discovered lately, and considerable work is being done at present. This district is situated about 10 miles north of Socorro.

Ladrones is situated in the Ladrone Mountains, about 25 miles northwest of Socorro. Ore is copper and some silver. The district is undeveloped, but some good copper prospects have been discovered.

Lajoya is comparatively a new district, but active and scientific mining has been going on under the direction of Lon Jenkins, E. A. Levy, and associates during the past year and a half, with very encouraging results. Ores: Gold, lead, and copper. A number of shipments have been made which have paid for developments. The ore is a high grade, and will bear transportation and smelter charges and still leave a profit to the owners. Nearest post-office, Lajoya, N. Mex. The mines are situated on the east side of the Rio Grande, about 5 miles southeast of Lajoya and 2 or 3 miles from the Atchison, Topeka and Santa Fe Railway.

Oscura mining district is situated about 45 miles east of the Rio Grande and the same distance from the railroad. Ores: Copper and lead. Some prospecting has been done and large quantities of low-grade ore have been discovered, but will not stand transportation to the railroad.

Hansonberg district shows copper and some gold and silver. Considerable development has been done in this district, and some very promising copper properties have been partially developed, the principal one of which is owned by A. Hogwall, of San Antonio, N. Mex., and C. Blanchard, of Las Vegas. The ore is very high grade and shipments have been made showing satisfactory returns. Distance from mine to railroad about 35 miles; nearest post-office, San Antonio.

Burro mining district is situated about 50 or 60 miles from the railroad, on the east side of the Rio Grande. Ores principally copper. Some development has been made and very good quality of ore taken out. The greatest drawback is the scarcity of water. It is probable, however, that water might be acquired by boring wells.

San Andres mining district is situated about 30 miles east of Lava Station. Ore: Copper. Considerable work has been done in this district, and at present copper ores are being shipped to El Paso smelter. The veins are good size, and ore running from 13 to 20 per cent is found in paying quantities. Some of the principal properties are owned by Mr. A. T. Harrison, the same being now operated under bond and lease. This is considered one of the richest copper districts in the county.

TIMBER.

The principal timber in the county is situated west of the Rio Grande. Good heavy pine timber is found in various places in the several mountain ranges. The Flagstaff (Ariz.), timber belt extends through western Socorro County. In the Mogollon range perhaps is found the best and largest timber belt in the county, covering an area from 5 to 20 miles in width and 20 to 30 miles in length. We find another belt of the same timber in the Friscos—Elk Mountains, Black Range, and San Mateo ranges—suitable for commercial and building purposes; also in the Magdalena and Gallina ranges, but not so large or of as good quality as some of the aforesaid ranges. One million acres would probably be a conservative estimate of the area of land covered with heavy pine timber suitable for sawmill and commercial purposes in the county. Very little cutting has been done, except the limited quantities used for mining purposes, erection of reduction works, etc., most of the timber being located a considerable distance from the railroad, and will not stand wagon transportation.

COAL.

Coal is found in the western portion of the county, which is supposed to be the Gallup coal belt. On account of no railroad facilities the coal is not being worked. The veins are from 6 to 7 feet thick. Coal is also found within 15 miles of the Magdalena. The Carthage coal fields are situated east of the Rio Grande, mention of which has been made heretofore.

SALINE LANDS.

Near the western border of the county are situated some salt lakes with an inexhaustible supply of a very good quality of salt, the product of which is being used by the mills at Mogollons, Graham, and Cooney. Some salt is also peddled around and used for domestic purposes. There are also some salt beds near the San Andres mountains, but not as good quality as the first-mentioned salt. Distance from railroad about 175 miles.

VALUATION.

According to tax rolls, which generally show about one-third the actual valuation, the property of the county is valued at $4,501,588; the bonded indebtedness approximately is $180,000.

CATTLE AND SHEEP.

The estimated number of sheep in the county is 200,000; number of cattle, 100,000 head; also several thousand head of horses.

RAILROADS.

The Atchison, Topeka and Santa Fe Railway Company owns and operates 107.76 miles of main-line track and 19.11 miles of side track; also division point and repair shop, round houses, etc., at San Marcial.

The county, generally speaking, is in a prosperous condition, caused by the rise in values of the products of the county, especially in cattle, sheep, wool, lead, and copper, etc.

THE SOCORRO FIRE-CLAY COMPANY.

The Socorro Fire-Clay Company is one of the best known corporations in the Territory and stands in the first rank of New Mexico industries. It has been gradually increased in capacity and improved in the quality of the articles manufactured, until it stands now as the best, if not the largest, fire-clay works in the Southwest. When running full capacity it gives employment to 35 men and ships 150,000 brick per month. It has two late-improved brick kilns with a down draft, having a capacity of 50,000 and 60,000 brick, respectively.

The fire-clay brick for smelter furnaces is made by hand into all shapes and sizes and of two different grades. They are really fine, and are growing in popularity with the different smelters throughout the country. Their building brick is made in three colors, buff, white, and red, and has been used extensively in the building up of Albuquerque and El Paso.

A very careful analysis of the clays surrounding Socorro has been made, and no less than 350 different kinds, suitable for making brick, pottery, tiling, sewer pipes, crucibles, scorifiers, mufflers, and almost everything requiring a fine grade of fire or brick clay.

This growing and important institution, like many others in the Territory, has succeeded only by good management and strict attention to business, and its success is now established beyond all doubt.

TAOS COUNTY.

The agricultural, mineral, and other resources of Taos County are of such a diversified character it will be impossible for me to give more than a brief outline of their nature and importance in the space assigned me.

Taos County might aptly be termed a paradox in civilization. It is the oldest and newest portion of the United States. Here, according to the traditions of our Pueblo Indians, were homes and farms five hundred years ago. Before Columbus discovered this country a portion of the Taos Valley was under cultivation, and before the *Mayflower* anchored off Plymouth Rock houses of adobe were clustered about the mouth of the Pueblo Canyon that sheltered the forefathers of some of the present residents of the Taos Valley. The houses of that period were replaced by the present "Pyramids of Taos," which, unlike those of Egypt, were built for homes for the living and not for the dead. The Pueblo Indians, without doubt, were the first home builders and farmers in America that still exist to emphasize the claim of their fathers to that distinction. Notwithstanding the fact that this is the oldest farming community in the United States, there are thousands of acres in this valley of as fine land as the sun ever shone on, that no doubt has the same growth of sage brush that covered it when the Pilgram Fathers landed on this continent. In many places the primitive methods prevail in the planting and harvesting that were common a thousand years ago, notably the wooden plow, the sickle, and the thrashing floor; yet, with all that, the most beautiful crops are the rule.

The mineral resources furnish a parallel to those of agriculture. The first authentic record of the production of gold, in what is now the territory of the United States, was the production of gold from the placers in the Taos Valley, nearly two hundred years ago, when this country was dominated by the Spanish The records of large shipments of gold to the City of Mexico are in existence to-day, and the ore-placer washings, extending for miles along the Rio Lucero, may be seen to-day. Ruins of Old Arastas that were used, perhaps, centuries ago for the extraction of the precious metals can be found to-day in the mountains; yet, without doubt, Taos County has more square miles of mineral territory that remains untouched by the prospector's pick than any county in the great mineral belt of the West. Surely it is a paradox. Progress in agriculture is noted during the past year. Improved machinery and improved methods are being introduced by the more progressive farmers. The reaper is taking the place of the sickle, and handsome carriages by the score are to be seen where the cart and wagon were in use before.

Notwithstanding the excessive drought this season, many fields of wheat will average 40 bushels to the acre, and there is the greatest abundance of agricultural products.

No finer fruit is grown anywhere than here in the Taos Valley. The orchards have come to stay, as failures of a fruit crop are rare indeed, and in some localities entirely unknown.

The greatest difficulty that the farmer in the Taos Valley has to encounter is the market for his surplus. Before the advent of railroads in the western country this valley was the granary of the southwest, and a portion of Old Mexico drew its supplies from here, but in recent years he has been compelled to depend upon a local market that was limited, and this curtailed production. However, the local market is being stimulated by the development of the mines in the adjacent mountain ranges, and another ray of hope from the prospects of a railroad in the near future is stirring the energies of the farmer. A railroad that will furnish a southern outlet, thus reaching the legitimate market for the flour and grain, will make this valley second to none in point of productiveness. The money for this enterprise is already assured, if the details of connection and right of way can be satisfactorily arranged. It is sincerely hoped that before the end of the next year the whistle of the locomotive will be heard in this valley and a new era of prosperity will have begun. With the coming of a railroad, new industries will be developed; this valley will become the feeding ground of northern New Mexico. The thousands of sheep and cattle now shipped to Colorado feeding points will be fattened here. The modern flouring mills will take the place of the old water mills, and reduction works will utilize the great veins of low-grade ores that are now practically valueless on account of the lack of transportation.

MINING INDUSTRY.

Considering the lack of capital, rapid strides are being made in the development of the mineral resources of this county. During the present season one new mill has been placed in operation, one is nearing completion, and the third is contracted for. These will have a combined capacity of over 100 tons of ore daily. In addition to that there are three new shipping mines which have been opened, and more would be listed as producers if capital would furnish local treatment for the ores. Millions of tons of low-grade ores are already exposed by recent development work and scores of low-grade veins remain to be opened. What a magnificent field for genius and capital. Genius to devise and capital to construct the plants for the profitable extraction of the precious metals from nature's treasure vaults in the Taos Mountains. However, capital is no longer ignorant of our great mineral resources, as more Eastern money has been invested in the mines of this county during the past year than in all previous history, but the field is practically unlimited, as this county contains over 900 square miles of known mineral territory. It has the advantage of good roads, timber, and water, and is lacking only in transportation. With the present rate of development Taos County in the near future will be second to none in the production of precious metals. This valley with its 300 square miles of the finest agricultural and fruit land, at an altitude of 7,000 feet, protected on three sides by high mountain ranges, and watered by seven rivers, with a climate that is unsurpassed, is destined to become the home of 100,000 people. Nature has given it the soil, the sunshine, the scenery, the pure air, and sparkling water; it remains but for man to improve, beautify, and adorn nature's work for this valley to become what the Indian legend claimed for it in the past, "The Paradise of America."

UNION COUNTY.

The most northeastern county of the Territory is Union, which was created in 1893. It is 123 miles long by 55 miles wide from east to west. It is mostly prairie land, but in the northern portion is a branch of the Raton Mountains. The land is chiefly used for grazing purposes, but along the many streams considerable farming is done, the soil being well adapted to the raising of nearly all the small grains and vegetables.

ALTITUDE AND CLIMATE.

The altitude is about 5,000 feet, which is an excellent average for all persons having pulmonary trouble combined with a weak nervous system, since the climate in this county is equal to almost any portion of the Territory for all pulmonary affections. The air is dry and crisp, is neither too hot in summer nor too cold in winter even for the chronic invalid.

TOWNS AND VILLAGES.

Clayton, the county seat, is the largest town in the county, and is situated on the Colorado and Southern Railway (formerly known as the Union Pacific, Denver and Gulf), in the northern half of the county, and about 10 miles west of the Texas line. The population of this town is between 700 and 1,000. It has an excellent water system and electric light plant, modern court-house costing $20,000, and fine public school building costing its progressive taxpayers $10,000, also a modern hotel, costing $20,000 when finally completed. The school census of this town shows 350 children of school age.

Folsom is situated in the northwest portion of the county, on same line of railway, is the second railroad town of importance in the county, and contains nearly as many people as Clayton. Formerly the United States land office was located here, but was removed to Clayton. Folsom has an altitude of over 6,000 feet and nestles near the mountains, surrounded by springs whose waters contain valuable medicinal qualities, and this town is becoming quite a health resort for many people from Texas and other States who come here during the summer season. Folsom has a fine public school building, built at a cost of $7,000; two very good hotels, and many stores and business houses. Folsom, like Clayton, has a large trade from the surrounding country, extending as far as 150 miles.

Other towns having post-offices, but off of the lines of railroad, are Veda, Capulin, Gallegos, Baca, Genova, Tequesquite, Albert, and many others of minor importance.

CATTLE.

Union County has 60,000 head of cattle within its borders. Many, if ot the large majority, are well-graded cattle of the Hereford, Jersey, horthorn, and other fine breeds.

SHEEP.

Three-quarters of a million sheep are now grazed in this county, many being Merinos and other well-known and valuable breeds. Scab is unknown among the sheep men here, and but few of these animals are lost here during the winter storms. The price of wool, sheep, and cattle having rapidly enhanced within a year, and these constituting the principal capital of the citizens of this county, the wealth of the county has kept the same pace.

SCHOOLS.

In all the school districts of the county the terms run from five to nine months, and every child within the confines of the county has the opportunity of acquiring at least a good common school education.

COAL.

Good coal is found in the northern part of the county, but owing to the nearness of other coal mines to the present railroad line no mines of coal have been developed, except such as the near-by settlers may do when removing coal for their immediate use.

HOMESTEAD LOCATIONS.

About two hundred homestead filings have been made at the Clayton land office during the past year, nearly all of which have been within this county, and while there is yet much valuable Government land here the indication is that the land containing living water will soon become individual property.

COST OF LIVING.

Exceptional inducements are offered the homeseeker in this county. Should he wish to engage in ranching, he may select his homestead from the thousand of acres of Government land at a cost of $16 for his 160 acres. He will find the expense of living not materially different from that in the East. Flour costs $2.80 per hundred; meats and grains are cheaper than they are in the far East, and groceries at prices charged in Denver or Kansas City, and in this climate of sunshine, after a few years, the summer heat of eastern districts, unknown in the arid portions of the West, and the rigors of severe winters of the Orient will hold out no inducement to him to leave the country of his adoption.

RAILROADS.

Union County is crossed by the Union Pacific, Denver and Gulf Railroad, a road running from Denver, Colo., to Fort Worth, Tex., a distance of 780 miles, which enters the county at a point near Folsom and leaves it at Texline, Tex. This road, which was built in 1888, has during the past five years improved greatly its roadbed and rolling stock until it has become one of the best roads in the West. Its passenger service is, because of its new and excellent coaches and fast-running trains, worthy of particular mention, and the traveler, leaving New Mexico one morning, reaches by close connections the city of Denver the same afternoon and Chicago the following evening. The road has, in way of improvements in Union County for the first six months of 1898, laid 10 miles of 65-pound steel in place of

52-pound rails; has fenced 41 track miles, or 82 linear miles; has ballasted 25 miles of roadbed 15 inches deep with cinders, besides building sheep-dipping plants at both Folsom and Clayton with a capacity of 10,000 sheep daily.

A new and roomy station has also been erected at Clayton, equipped with electric lights. This road is a most patent medium in moving New Mexico cattle to northern ranges, and thousands of head are driven annually from the Pecos River district, in southern New Mexico, to Clayton and Folsom, where they are shipped to Wyoming, Montana, and Eastern markets. In the fall of the year no less than 200,000 sheep are also carried by the Denver and Gulf road to Colorado feeding points.

POPULATION.

The population of Union County is about 7,000, almost without an exception prosperous and enterprising. Never in the history of the county has there been an appeal for assistance because of poverty by the inhabitants, nor is a pauper within the confines of Union County.

Neat residences, well kept, impress the visitor at once with the prosperity of Union County in general.

VALENCIA COUNTY.

Valencia County is one of the largest and oldest counties in the Territory of New Mexico; it reaches from the Arizona line on the west to the line of Guadalupe County on the east, and has a total area of 5,621,760 acres. Of this area about 3,000,000 acres make good pasture land, 1,000,000 acres are irrigable and fit for agricultural purposes, and about 750,000 acres are good timber lands.

At the present time there are at least 25,000 acres under cultivation in the county, of which a very small proportion is cultivated without irrigation.

The population of Valencia County is about 15,000 inhabitants, almost without exception prosperous and enterprising. Never in the history of this county has there been a pauper within it, and for law and order it is not surpassed by any county in the Territory, there not being a single person in the county jail, nor has there been any for the past year.

The county seat is Los Lunas, situated on the Atchison, Topeka and Santa Fe Railroad, 21 miles south of Albuquerque. Belen may be mentioned as another of the principal towns of the county, in the Rio Grande Valley, it having all modern improvements, including a fine roller mill, elegant stores, schoolhouses, and churches.

Valencia County is traversed by both the Atchison, Topeka and Santa Fe Railroad and the Santa Fe Pacific Railroad, the former going down the Rio Grande Valley and the latter traversing the western portion of the county into Arizona.

SCHOOLS.

Valencia County compares favorably with every other county in the Territory as to its school facilities, and while it may not have as fine edifices as in more pretentious counties, the average length of the school term is eight months in the year, and there is hardly a school district but what has plenty of funds at its command.

COAL AND MINERALS.

Coal has been found in several sections of the county, both east and west, and is of an excellent quality. In the western part of the county a good quality of onyx has been discovered. Large deposits of copper may be found in the eastern section, and gold and silver mines have been found in both the eastern and western sections of the county while in the Rio Puerco Valley there are some large beds of gypsum and a superior quality of building stone has also been found.

FARMING.

The largest amount of farming done in this county is confined to the valley of the Rio Grande, which river flows from north to south through the center of the county, although there are about 10,000 acres of land cultivated in the eastern and western portions. The soil of the Rio Grande Valley is extremely rich, and is being made better year by year by the application of river sediment which is brought onto the land by means of irrigation.

The principal products of this county are wheat, corn, oats, alfalfa, beans, and a large variety of fruits. Apples, peaches, and grapes grow to perfection in the lower valley. Grapes are grown in large quantities, and not only have we the justly celebrated Mission grape, but also several other varieties, as the Tokay, Sultana, Concord, Muscat, Gro Colmers, etc., which find a ready market at various eastern points.

The wheat grown near Los Lunas took the first prize at the World's Fair at Chicago over all competitors, and oats that were grown near Belen took the second prize, Russia taking the first.

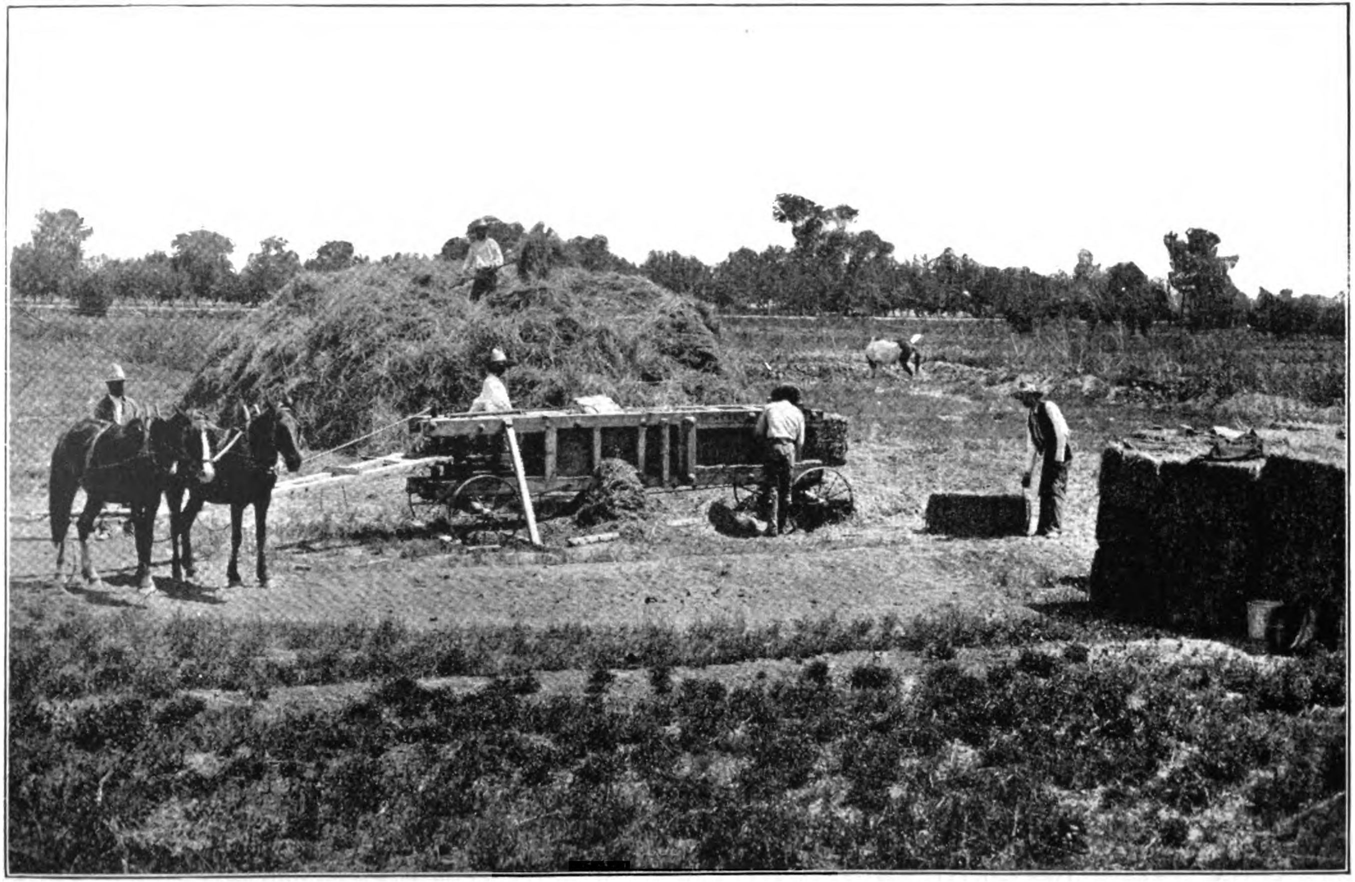
Alfalfa crops bring good returns, and when properly handled produce from 1½ to 2 tons per acre at each cutting, and generally four cuttings are had each year, and ready sale, at good prices, is obtainable for all that can be produced.

On the western mesas of the county canaigre root is found in abundance, and as the demand for this root increases from year to year, for tanning purposes, an important industry will be developed in that line in the course of a few years.

Sugar beets have been planted in a small way in different parts of the county, and tests of them have given satisfactory results as to percentage of sugar, which is greater than that of a similar product grown in California, and careful estimates of which give indications of a yield of about 30 tons to the acre. As soon as a sugar factory can be established in the valley of the Rio Grande, a large portion of the farming land of the county may be devoted to beet raising.

STOCK.

In this county there are about 400,000 head of sheep, 25,000 head of cattle, and over 5,000 head of horses. The western as well as the eastern part of the county affords splendid pasture for stock whose owners, under the present prosperous conditions of the sheep and cattle business, are growing rapidly rich.



Baling Alfalfa in San Jjan County.

THE PRESS.

Of the 20 counties in New Mexico, newspapers are published in 19. Cities, towns, and villages in which papers are published number 32, of which 18 are county seats. Of the 70 papers published in New Mexico 5 are daily, 58 weekly, and 7 monthly.

Politically the papers are divided as follows: Republican, 36; Democrat, 16; Democratic-Populist, 5; independent, 4; religious, local, etc., 9.

The papers, particularly the dailies, have large circulation and are influential in their respective communities.

Much of the development of the Territory is due to the energy and enterprise of the newspaper men, which has been a labor of love, for in New Mexico, like in many other States and Territories of our Union, the newspaper business is not, from a purely financial standpoint, a lucrative one.

The following is a list of newspapers printed in New Mexico:

Bernalillo County:	
Albuquerque—	
Abogado Cristiano Neo Mexicano (Spanish and English)	Methodist.
Advertiser	Democratic-Pop.
Bandera Americana (Spanish)	Republican.
Citizen (daily)	Republican.
Citizen (weekly)	Republican
Journal-Democrat (daily)	Republican.
La Hormiga de Cro (Spanish)	Republican.
Nuevo Mundo (Spanish)	Independent.
New Mexico Mining Review (monthly).	
The American (weekly)	Republican.
University Bulletin (monthly)	Educational.
Bland—	
The Herald (weekly)	Independent.
Gallup—	
The Gleaner (weekly)	Democratic.
Chaves County:	
Roswell—	
The Register (weekly)	Republican.
The Record (weekly)	Democratic.
Colfax County:	
Raton—	
The Range (weekly)	Republican.
The Reporter (weekly)	Democratic.
The Gazette (weekly)	Democratic.
Springer—	
The Stockman (weekly)	Democratic.
Elizabethtown—	
New Mexico Miner (weekly)	Republican.
Donna Ana County:	
Las Cruces—	
Donna Ana County Republican (weekly)	Republican.
Rio Grande Republican (weekly)	Republican.
El Tiempo (Spanish, weekly)	Republican.
Independent-Democrat (weekly)	Democratic.
New Mexican Collegian	Collegiate.
Southwestern Farm and Orchard	Agricultural.
El Labrador (Spanish, weekly)	Democratic.
Eddy County:	
Carlsbad—	
Argus (weekly)	Republican.
Current (weekly)	Democratic.
Pecos Valley Stockman (weekly)	Democratic.

Grant County:	
Silver City—	
Enterprise (weekly)	Republican.
Independent (weekly)	Democratic.
Lordsburg—	
Liberal (weekly)	Republican.
Deming—	
Herald (weekly)	Republican.
Headlight (weekly)	Democratic-Pop.
Guadalupe County:	
Puerto de Luna—	
La Voz Pública (Spanish and English, weekly)	Republican.
Lincoln County:	
White Oaks—	
Eagle (weekly)	Democratic.
Capitan—	
El Capitan Republican (weekly)	Republican.
Miner (weekly)	Independent.
Mora County:	
Wagon Mound—	
El Sol de Mayo (Spanish and English, weekly)	Republican.
Mora—	
Anciano (Spanish, weekly)	Protestant.
Otero County:	
Alamogordo—	
Baptist Monthly	Religious.
Alamogordo—	
The News (weekly)	Republican.
Tularosa—	
Democrat (weekly)	Democratic.
Alamogordo—	
Banner (weekly)	Democratic.
Rio Arriba County:	
Chama—	
Tribune (weekly)	Republican.
Angostura—	
La Luz (Spanish and English weekly)	Republican.
San Juan County:	
Aztec—	
San Juan County Index (weekly)	Independent.
Farmington—	
Farmington Times (weekly)	Democratic.
San Miguel County:	
Las Vegas and East Las Vegas—	
Optic (daily)	Democratic-Pop.
Optic (weekly)	Democratic-Pop.
Voz de Pueblo (Spanish, weekly)	Democratic-Pop.
Independiente (Spanish, weekly)	Republican.
Las Vegas Republican (daily)	Republican.
Revista Catholica (weekly)	Catholic.
Normal University (monthly)	Educational.
Santa Fe County:	
Santa Fe—	
New Mexican (daily)	Republican.
New Mexican (weekly)	Republican.
El Nuevo Mexicano (Spanish weekly)	Republican.
Capitol	Republican.
Boletin-Popular (Spanish)	Democratic.
Sierra County:	
Hillsboro—	
Advocate (weekly)	Democratic.
Socorro County:	
Socorro—	
Chieftain (weekly)	Republican.
El Republicano (Spanish and English)	Republican.
San Marcial:	
Bee (weekly)	Republican.

Taos County:	
Taos—	
Cresset (weekly)	Republican.
Red River—	
Prospector (weekly)	Republican.
Bulletin (weekly)	Republican.
Union County:	
Clayton—	
Enterprise (Spanish and English)	Republican.
El Fenix (Spanish weekly)	Republican.

SOCIAL CONDITIONS.

The cities and towns of our Territory are filled with cultured, companionable people, ever ready to entertain and look out for the welfare of the stranger within their gates. The hotels are equal to any of the Eastern summer resorts, and life is as attractive here as anywhere else in the world. In most of the towns throughout New Mexico a picturesque plaza forms the center of the town. In this plaza concerts are given regularly by the local bands of the town, which are enjoyed alike by the resident and the stranger.

MORAL CONDITIONS.

The material prosperity of the Territory of New Mexico is not more marked than is its moral advancement. The various fraternal societies are well represented, and there are a number of trade and labor unions.

The various church organizations are in charge of refined and cultured men and are well represented. The following named churches are all well attended throughout the Territory in every county and city: Catholic, Episcopal, Methodist, Methodist Episcopal, Methodist Episcopal South, Presbyterian, Congregational, Christian, Baptist, Mormon, African Methodist, African Baptist, and others.

FRATERNAL SOCIETIES.

The fraternal societies in existence here are as follows: Masonic Knights Templar, Thirty-second Degree Scottish, Odd Fellows, Knights of Pythias, Ancient Order of United Workmen, Woodmen of the World, Elks, Red Men, Mystic Shriners, Junior Order of Mechanics, the different railroad orders, and others.

We also have a large organization of the Grand Army of the Republic, with posts at different localities in the Territory. Their annual reunions are always looked forward to with great pleasure by the old soldier residents of our Territory.

THE VARIOUS CHURCHES.

Next to the schools, the American immigrant inquires concerning the church facilities. These, like the schools, are better in the towns than they are in the country, but this is also the case very largely in the States, and is necessarily so in all new sections. All the leading denominations are represented in the Territory, the towns being graced with handsome edifices, where attractive sermons are delivered by able and educated ministers, and where well-trained choirs add the pleasing enticement of music to the gospel's tender entreaties.

The Catholic Church, of course, first occupied the field in the Territory. The first Protestant Church to enter the Territory was the Baptist. Rev. Samuel Gorman of that Church in 1850 was the first Protestant missionary to the Pueblos, his labors being centered in Laguna. The Methodists were but one year behind their Baptist brethren. Following close upon the Methodists, the Presbyterians came to the Territory in 1851. The first Episcopal services in New Mexico were held at Santa Fe in 1863. The first Congregational Church in New Mexico was organized in 1881 at Albuquerque, and several other churches have since followed.

There are many of the Jewish faith in New Mexico, but, as far as the writer has been able to ascertain, they have organized congregations and regular worship only at Albuquerque and Las Vegas.

The colored people of the Territory generally belong to the African Methodist Church, of which denomination there are organized churches at Albuquerque, Las Vegas, and one or two more of the larger towns.

The Mormons have a few settlements in New Mexico, but these they have exclusively to themselves, and they are pretty generally on the northwestern borders of the Territory. There are Freethinkers, Unitarians, and Universalists scattered through the various towns, but none of these faiths have any organized societies.

GAME AND FISH IN NEW MEXICO.

In the early days New Mexico was the paradise of the hunter and trapper. The earliest explorers of this Territory, and what is now the State of Colorado, in the first quarter of the present century, came here in the pursuit of their chosen calling of fishing, trapping, and hunting. The old trapper was a peculiar individual and many are the tales which are yet told by the oldest inhabitants of the adventures and experiences of Kit Carson, Bent, Williams, and their associates in the far West. The old Santa Fe trail for years to come will be an ever pleasant theme for song and story of those hardy explorers who were the precursors of the civilization which we now enjoy. The coming of the railroad and the great influx of settlers throughout the Rocky Mountain country deprived the old hunter and trapper of his means of sustenance and to-day he is but a memory.

In the early days, while yet the hostile Indians roamed the Great Plains, game of every kind was plenty. The buffalo, the deer, elk, bear, mountain lion, and all the smaller varieties of wild animals, were here on every hand. To-day the buffalo, like the old plainsman and hunter of the past, is only a tradition.

In the mountains, however, there are yet remaining deer, bear, mountain lion, and elk; turkey and grouse, beaver and big-horn sheep and mountain goats, as well as all the other smaller varieties of game which attract the sportsman and the hunter. All of this class of game is to be found in the mountains, from Colorado on the north to the great spurs and ranges extending to and covering the extreme southern portion of New Mexico and the northern part of the Republic of Mexico.

In the highest mesas and near the peaks of our greatest mountains are found the sheep, goat, and elk. In every mountain range of consequence in the Territory may be found the black, cinnamon, and silver-tip bear, the latter a small variety of the grizzly, but entertaining enough upon occasion to satisfy the true sportman's heart to a nicety. It may truthfully be said that deer are comparatively in plenty in this Territory. The day was when great herds of antelope roamed the plains and valleys lying to the east of the main range of mountains in New Mexico, but to-day they are scarce, comparatively few remaining. Those which may be found are located in eastern Valencia, Bernalillo, and Guadaloupe counties, while some have been seen as far north as Union County and as far south as Lincoln, Chaves, Eddy, Otero, Doña Ana, Grant, and Sierra counties.

On the plains and in the valleys can be found quail, pheasants, Mongolian or Chinese pheasants, prairie chickens, and during the seasons geese, brant, ducks, plover, curlews, and snipe.

In every stream of consequence in New Mexico is found the Rocky Mountain trout. A gamer fish never rose to a fly. The principal streams where this delicious fish may be caught are the Pecos, Chama, Brazos, Navajo, Rio Pueblo, Santa Clara, San Antonio, Jemez, Los Pinos, Bonito, Mora, Sapello, Manuelitas, Gallinas, and Ponil, mostly in the northern and middle portions of the Territory, and also in all the mountain streams in western Socorro and Sierra counties in the south. In some of the streams of Lincoln and Chaves counties are found great quantities of black bass, of a kind, however, not so gamy as his brother of the lakes and rivers in the North.

It may be safely said that there is yet remaining in the United States proper no place where game is more abundant or true sport more obtainable than in New Mexico.

The Territory, wisely anticipating the results caused by the inroads which are constantly being made upon the game everywhere throughout the Union, have passed very stringent laws relative to the slaughter and selling of game. The legislature of 1897 passed a very comprehensive law, by the terms of which it is unlawful to kill or wound, insnare or trap any elk, deer, antelope, fawn, mountain sheep, ibex, Rocky Mountain goat, or beaver within the boundaries of New Mexico, except that antelope and deer with horns may be shot during the months of September, October, and November of each year in the northern counties, and during October, November, and December in the southern counties. It is likewise unlawful to kill, wound, or insnare any quail, grouse, prairie chicken, pheasant, partridge, or wild turkey, except that such birds may be shot with a gun only during the months of September to February. The open season for fishing begins with June and ends with October of each year. The penalties for violation of the acts of 1897 are very severe and comparatively easy of enforcement, the burden of proof being upon the person charged with violation of the provisions of the act. In no event can any game be exposed for sale which has been killed within the limits of the Territory, and the burden of proving that any game or fish has been killed outside of New Mexico, when exposed by butchers and dealers in the markets for sale, is upon the dealers and butchers; a very wise provision, as experience in prosecutions has demonstrated. A system of game wardens is established by the act; the wardens are appointed by the governor, and they are clothed with the authority of making arrests, the same as the sheriffs of the several counties. The wardens hold their offices at the pleasure of the governor, and the executive is not restricted as to the number which he may appoint. Under this law the game of New Mexico is being thoroughly protected, not only for the benefit of our own citizens, but for any and all true sportsmen who may see fit to come here for a month's enjoyment of the hunting and fishing which is to be had in our mountains, mesas, plains, and streams.

A cordial invitation is extended to all of true sportsmen's instinct to a participation in the enjoyment of the sport of kings, with an assurance that the hand of welcome is always extended to those who come for the enjoyment and not to the abuse of the privilege.

The sportsmen visiting New Mexico need have no fear regarding accommodations, as proper conveyances can be secured at any point on the railroad by giving short notice, while at any of the principal towns he will find livery stables well supplied with teams and mountain wagons especially kept for the convenience of hunting and fishing parties, and who can furnish reliable drivers who are familiar with every desirable locality in their section of the Territory and whose charges are very reasonable.

RESOURCES.

The resources of New Mexico are boundless, and the possibilities of development in the Territory of New Mexico in numerous directions are unequalled by those of any other State or Territory in the Union. On account of the varied elevation almost everything that flourishes in the temperate zone, and many fruits that belong to the Tropics, grow to perfection in New Mexico. As a stock country it is excelled by none, in addition to which large, rich deposits of gold and silver, coal, iron, copper, sulphur, marble, building stone, and many different kinds of precious stones are found, New Mexico being the principal source of supply of the world for turquoise, which is of the finest quality and color. What we need to develop the mines, as well as the agricultural, stock growing, and other capabilities of our Territory, is capital, and large fortunes are in store for those who have the money and industry to develop the wonderful resources of New Mexico. New Mexico needs more people; people who can invest in her mines and other industries, which, if developed, would make our Territory one of the richest on the globe, and when the world at large becomes convinced of this, New Mexico will enter upon an era of prosperity never before dreamed of.

The ranges for sheep and cattle were never in better shape, and stock of all kinds is in excellent condition. The herds and flocks have increased in size and value very materially since the opening of the year, and with plenty of grass assured the sales of sheep and cattle this fall will bring large sums of ready money into the Territory.

Every prediction made for prosperity early in the year is now in a fair way to be fulfilled, and New Mexico will exceed almost all former yearly records in the amount of revenue derived from produce, sheep, and cattle at the close of the year's work.

UNDEVELOPED RESOURCES.

The Territory of New Mexico is a most inviting field for capital and skilled labor, having undeveloped resources almost without limit. Millions of acres of the finest agricultural land are yet to be reclaimed by the development and proper storage of water. Communication by enlarged and cheaper railroad facilities between the various portions

of the Territory is earnestly hoped for, that an interchange of home products between the mining and agricultural sections may be carried on.

A large extent of New Mexico's rich mineral lands yet remains to be explored and developed. Her grazing lands have not been fully used, owing to the failure to develop artesian water (of which the finest in the world is found here) and erect surface windmills, the opportunities and conditions for which are excellent.

The opportunities of industrial life offer varied and profitable inducements to capital and labor, and the agricultural, mineral, and grazing wealth should receive from outside investors the attention they deserve.

Factories might also be started with profit. In this Territory there are many plants and grasses of indigenous growth that could be used in the manufacture of paper, bagging, rope, etc. Some of the hard woods growing in this Territory, at the base of the mountains, when dry take a beautiful polish, which produces a veneering of excellent quality. Eastern manufacturers could be supplied with this article who now obtain their product from other countries.

Respectfully submitted.

MIGUEL A. OTERO,
Governor of Territory of New Mexico.

SANTA FE, N. MEX., *September 12, 1900.*

Garfield County Wheat Field.

REPORT

OF THE

GOVERNOR OF OKLAHOMA.

TERRITORY OF OKLAHOMA,
EXECUTIVE DEPARTMENT,
Guthrie, October 1, 1900.

SIR: I have the honor to transmit herewith my annual report as governor of Oklahoma Territory for the year ended June 30, 1900, depicting as it does a condition of prosperity and progress not surpassed in any of the great Commonwealths of the nation.

A PROPHECY.

A few weeks prior to the opening of Oklahoma to settlement the late Milton W. Reynolds, a well-known western journalist, who had spent much time in Oklahoma among the Indians and was thoroughly posted upon this then generally unknown land, wrote the following:

> To the south and adjoining Kansas lies Oklahoma "the land of the red man." From her loins will spring vigorous communities to people the inchoate state which is now forming. Products more varied and a greater vegetable life will spring up from her teeming soil. As the civilization of the West and the East are blending and uniting to form a more vigorous and compact growth, so the products of the more northern and the extreme southern regions will furnish the greatest yields in this warm soil and genial climate, free comparatively from the forces that dwarf their development in the Gulf States and lake region or the mountainous areas of New England.
>
> The ideal Western Commonwealth will there be formed. Climatically the conditions are perfect. Topographically the inspirations are not wanting. The atmosphere is electric and full of life-giving properties.
>
> The struggle for the possession of Oklahoma has been long and arduous. The cattle syndicates made a desperate and prolonged contest. But the appeals of the settlers have finally been heard. Soon the vast unpeopled solitude of this mighty domain will be filled with the hum of machinery and the voices of the productive industries; and the opening of farms and the building of cities will possess the places where desolation and solitude now reign. From this great conquest an ideal State will spring, and a type of the best civilization of the age will finally be found in Oklahoma. It will be vigorous, independent, strong, but conservative and cosmopolitan. It will be the product of that civilization which is the resultant of the westerner, not of twenty-five years ago, but of the young men of the plains as we see them marching in battalions, strong, fresh from the colleges and schools, manned and equipped for the highest duties of a social life that demands and is content only with the best results.

ITS FULFILLMENT.

A few weeks ago Hon. Frank Eddy, member of Congress from Minnesota, visited Oklahoma for the first time, and upon his return home gave his impressions of the country and the people in an interview in the Minneapolis Journal, from which I quote the following:

> I was in Oklahoma four days, and during that time I traveled over 1,200 miles in the Territory and spoke eight times, speaking at El Reno, Enid, Medford, Blackwell, Ponca City, Shawnee, Oklahoma City, and Guthrie.
>
> Oklahoma is a great Territory, possessing inexhaustible resources, and will make a great State. I do not think the soil will equal that of Minnesota in fertility, but the climatic conditions are such that the opportunities of diversification are simply unlimited. I saw cotton, wheat, sweet potatoes, Irish potatoes, castor beans, common beans, watermelons, cantaloupes, peaches, turnips, tobacco, cabbage, apples, onions, pears, peas, millet, alfalfa, barley, corn, kaffir corn, oats, and, in fact, I saw everything growing on one farm that I ever saw growing anywhere, north or south, except rice, sugar cane, bananas, and oranges. It is a combination of Winnipeg and Texas, Minnesota and Georgia, Delaware and California. One admirer of mine presented me with a watermelon weighing 90 pounds and wanted me to take it to Minnesota with me.
>
> There is a curious mixture of northern thrift and energy and southern indolence and love of ease, but the lavish hospitality of the old South prevails everywhere, and a stranger needs only to stay over night in the Territory and he feels instinctively as if he knew the people always.
>
> Its inhabitants have come in from every State and Territory in the Union, and from every country in the world. Every face, color, and nationality has its representatives.

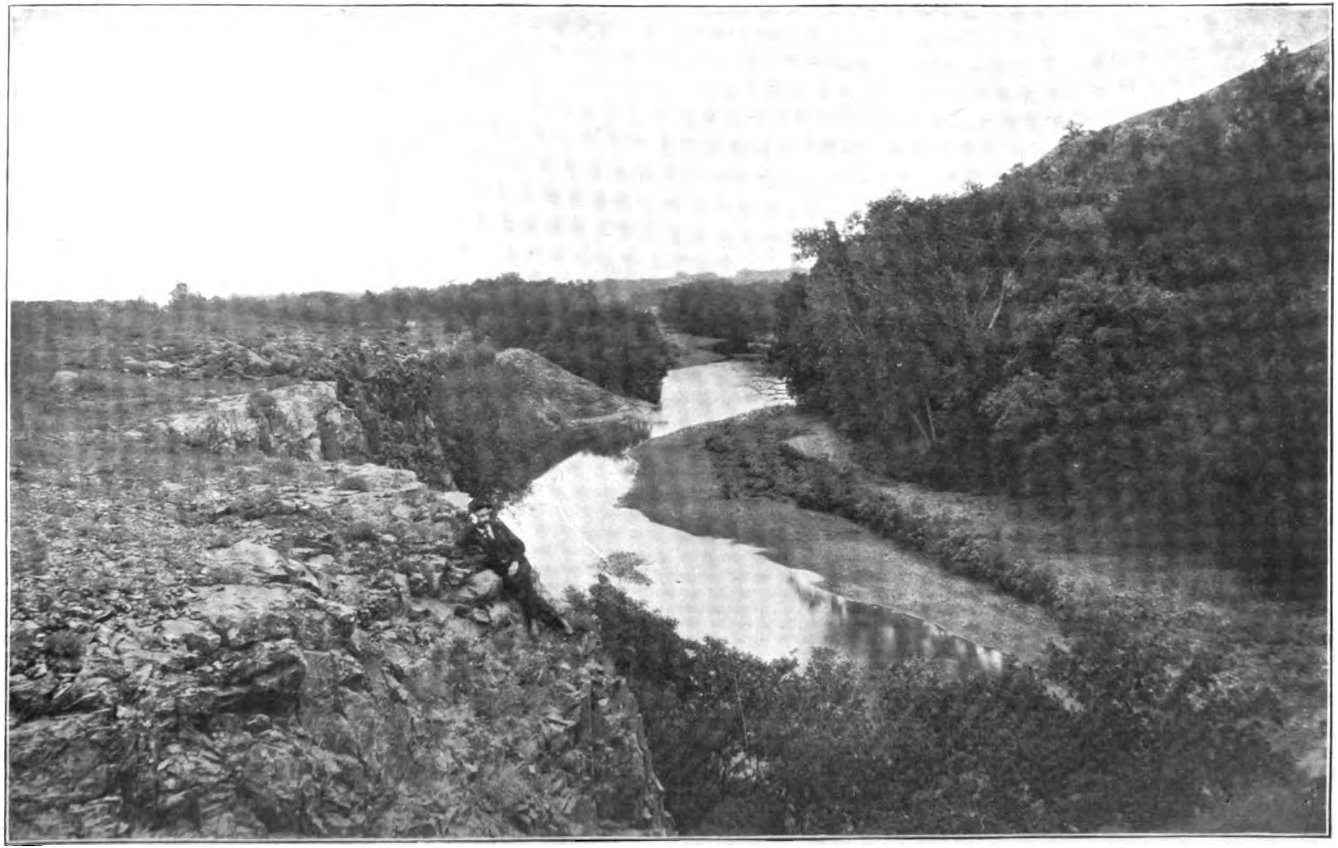
A YEAR OF ABUNDANCE.

This has been another year of general prosperity for all of the people of the Territory. The farms and orchards have yielded abundant harvests, the herds and flocks increased, all mercantile business expanded, manufactures developed along new lines, population of cities and counties increased, railways extended, commerce grown into magnificent proportions, and new vistas of progress and development opened before the eyes of all.

The time was, in the not far distant past, when the man or woman who started for Oklahoma from most sections of the Union was looked upon with suspicion, or bid a last farewell by friends such as is accorded the adventurer starting for the jungles of Africa or the explorer for the North Pole, and the citizen of Oklahoma was gazed upon as a curiosity in the communities of the East; but all this is changed. The person starting for Oklahoma to-day is envied by all those so unfortunate as to be left behind, and Oklahomans everywhere are besieged with inquiries regarding their wonderland.

No section of the country is so well or so favorably advertised to-day as is Oklahoma. The eyes of the nation are upon us and the feet of countless immigrants are turned this way. Capital no longer hesitates to respond to our beckoning, but comes of its own accord seeking an opportunity to participate in the fruits of the land.

With 400,000 people, with 100,000 children in her public schools, and 2,000 young men and women in her higher institutions of learning, with $50,000,000 taxable valuation and $135,000,000 real wealth; with products of farm, factory, and mines aggregating $75,000,000 for the fiscal year, with a soil whose fertility seems wonderful, with a climate unsurpassed anywhere, with crops surpassing those of many of the leading agricultural States, with waving grain, fruit-laden orchards and vineyards, and cattle upon a thousand hills, with churches, and school houses and universities, and a people as loyal and true and patriotic as ever breathed the air of heaven, Oklahoma to-day stands knocking at the portals of the Union expecting soon to place upon the starry field of the nation's banner a star whose brightness will never grow dim.



VIEW ON MEDICINE CREEK NEAR FORT SILL.

To the people of all classes and conditions less favored in their surroundings and opportunities Oklahoma extends an invitation to come and share in the bounteous plenty accorded this new and wonderful commonwealth.

GROWTH OF THE TERRITORY.

The present area of Oklahoma is 38,715 square miles.

The country originally known as Oklahoma, or "Beautiful Land," contained less than 3,000,000 acres, comprising the larger portion of the counties of Kingfisher, Canadian, Oklahoma, Cleveland, Logan, and Payne. This land was thrown open by proclamation of the President, April 22, 1889, but a Territorial government was not provided until June, 1890, the 75,000 or more people being for over a year with no form of civil government save that devised and carried on by common consent, yet during this time there was no lawlessness prevalent, and there was never an hour in which property and life were not as safe as in any of the States.

The act creating the Territorial government created the county of Beaver, with an area of 3,681,000 acres, out of No Man's Land and attached it to Oklahoma.

In September, 1890, the Sac and Fox, Iowa, and Pottawatomie reservations, embracing 1,282,434 acres in the eastern part of the Territory, were thrown open to settlement, and the following spring the Cheyenne and Arapahoe lands of 4,297,771 acres were added. In 1893 came the opening of the Cherokee Outlet, with its 6,014,239 fertile acres, in 1895 the Kickapoo Reservation of 206,662 acres, and early in 1896 Greer County, a small empire in itself, was added by a decision of the Supreme Court of the United States, giving the Territory its present settled area of something over 19,000,000 acres, 6,949,715 acres being still included in Indian and other reservations, of which about one-half will be opened to settlement within the coming year.

LOCATION AND GENERAL CONDITIONS.

Few people, even among the residents of the Territory, realize that Oklahoma is as far south as North Carolina. The thirty-seventh parallel, north latitude, forms the northern boundary of the Territory, and the extreme southern point touches the thirty-fourth parallel.

With the exception of Beaver County, which extends in a strip 35 miles wide to the one hundred and third meridian, nearly all of the Territory lies between 96° 30′ and 100° west longitude, being in the same belt as central Kansas and Texas.

In general, the face of the country is rolling prairie, with a considerable number of rivers and streams, usually flowing from the northwest to the southeast, and often having high and steep banks. In the eastern half there are considerable areas covered with timber, usually of the different varieties of oak. Timber is found in the valleys of the streams in all parts of the Territory.

The rainfall is sufficient for the needs of the great variety of crops successfully grown, and good water can be found in all parts of the Territory at depths ranging from 20 to 100 feet.

The winters are short and mild, the temperature rarely reaching the zero point and then only for a few hours, while on the majority of winter days it is far above freezing. The summers are hot, but a constantly blowing south breeze tempers the rays of the sun, and the nights are cool and pleasant, inducing refreshing sleep. The spring and fall months are most delightful, and are surpassed nowhere.

ALTITUDE.

The altitude of the Territory ranges from 800 to 4,000 feet above sea level, the lowest points being in the east central part of the Territory and rising gradually to the west.

I give below the altitude of a number of the towns of the Territory:

Altitudes in Oklahoma.

	Feet.		Feet.
Alva	1,330	Luther	935
Anadarko	1,171	Mangum	1,585
Arapahoe	1,560	Medford	1,091
Beaver	2,500	McLoud	1,057
Bridgeport	1,425	Mountain View	1,320
Calumet	1,375	Mulhall	936
Cashion	1,014	Munger	1,195
Chandler	900	Newkirk	1,149
Choctaw City	1,109	Noble	1,158
Council Grove	1,234	Norman	1,159
Dale	1,039	Oklahoma City	1,200
Dickson	1,219	Pawnee	786
Doggett	910	Perkins	794
Earlboro	1,028	Perry	871
Edmond	1,191	Pond Creek	1,046
El Reno	1,326	Ponca City	946
El Reno Junction	1,334	Ripley	776
Enid	1,244	Shawnee	1,045
Fort Reno	1,345	Stillwater	832
Garber	1,183	Stroud	910
Geary	1,545	Sweeney	1,070
Granite	1,591	Union City	1,319
Guthrie	932	Virginia	1,206
Hardesty	3,000	Waukomis	1,238
Hennessey	1,159	Waynoka	1,464
Jones City	1,145	Weatherford	1,650
Kildare	1,102	Wellston	900
Kingfisher	1,048	Woodward	1,880
Kiowa	1,528	Yukon	1,299
Lakeview	1,214		

POPULATION.

In my opinion 400,000 is a conservative estimate of the population of Oklahoma at this time.

I give below the census returns as taken by the county assessors of the Territory in 1898 and 1900:

County.	Population.		County.	Population.	
	1898.	1900.		1898.	1900.
Beaver	2,548	2,847	Logan	23,589	*a* 28,000
Blaine	8,527	10,682	Noble	10,421	12,638
Canadian	18,336	*a* 20,000	Oklahoma	20,324	*a* 28,000
Cleveland	15,426	15,338	Pawnee	10,795	12,222
Custer	6,482	12,260	Payne	17,386	19,873
Day	843	*a* 1,800	Pottawatomie	22,594	22,475
Dewey	4,126	7,966	Roger Mills	2,262	6,173
Garfield	16,228	20,438	Washita	9,469	15,108
Grant	14,319	19,630	Woods	24,414	31,968
Greer	10,132	17,750	Woodward	4,206	11,554
Kay	18,000	20,298	Reservations	13,033	*a* 15,000
Kingfisher	16,044	18,187			
Lincoln	21,884	26,680	Total	311,400	396,909

a Estimated.

It will be seen that the returns, with three counties carefully estimated, give a population of 396,909, but it is a well-known fact that the assessors miss many people who do not have property to list for taxation, and I feel that 400,000 is a very conservative figure indeed. When the fact that the population of the Territory in 1890 was but 61,834 is considered, it seems reasonably certain that no State or Territory in the Union will show so great a per cent of increase during the past decade as Oklahoma.

The census of 1890 showed 95 per cent of the population of the Territory American born, and I believe that the population at this time will show not to exceed 10 per cent of foreign birth.

In 1890 the Territory had but 5.37 per cent of illiteracy among the people, having a less percentage than thirty-five States and Territories, and it is probably still less at this time.

The people of Oklahoma are progressive, energetic, industrious, patriotic, and law-abiding. Coming from every section of the nation, they have blended together into a civilization and citizenship peculiar to this new and rapidly developing country. A better, more hospitable, more open-hearted or liberal people are to be found nowhere, and they are all united together in a desire to build here one of the grandest of commonwealths, whose star shall be the brightest on the nation's azure field and whose people shall be known far and wide for their loyalty, patriotism, and Christian citizenship.

A REMARKABLE PEOPLE.

William E. Curtis, the well-known newspaper correspondent, visited Oklahoma last year and prefaced a series of articles on the Territory with the following:

> Oklahoma is a unique example of nineteenth century civilization. It did not appear in the last census, but in the next it will probably show something like 375,000 population, for the last count made by the local enumerator, in 1898, was 311,400.
>
> The people have been so busy building schoolhouses and churches that they have not had time to build court-houses and jails, and the Territory is still without a capitol building; but that is due chiefly to the rivalry between two or three of the leading towns to secure the seat of government. By the census last year there were more than 700 churches and more than 1,000 Sunday schools, with an average attendance of 40,000. This is one church for every 440 of the population, and one Sunday school for every 311. Ten per cent of the inhabitants of Oklahoma are communicants in some church, which is probably a larger percentage than any of the older States can show, but it should be remembered that the Territory was settled by a remarkable class of people.

TAXABLE PROPERTY.

The total assessed valuation of the Territory this year is $49,338,661, an increase of $6,386,247 over 1899.

Property is listed for taxation at about one-third its cash value. Every county, except Oklahoma County, showed an increased valuation this year.

The following table gives the valuations in 1899, the valuations as returned in 1900, and the same as equalized by the board of equalization:

County.	Valuation by county clerk, 1900.	Valuation by board of equalization, 1900.	Railroad property, 1900.	Grand total, 1900.	Total valuation, 1899.
Beaver	$1,466,650	$1,571,518	$2,045	$1,573,563	$1,341,267
Blaine	606,153	586,395	47,380	633,775	505,711
Canadian	4,195,241	4,959,985	631,071	5,591,056	4,356,858
Cleveland	1,584,413	1,695,093	149,651	1,844,744	1,775,142
Custer	1,298,766	1,251,727	26,467	1,278,194	1,051,638
Day	483,437	420,599	14,413	435,012	399,668
Dewey	656,157	674,200	....	674,200	498,995
Garfield	1,811,681	2,066,350	258,944	2,325,294	2,034,001
Grant	1,469,330	1,558,668	305,725	1,864,393	1,820,615
Greer	2,207,817	2,049,585	....	2,049,585	1,622,404
Kay	2,279,495	2,208,853	438,191	2,647,044	2,192,071
Kingfisher	2,199,253	2,393,750	182,760	2,576,510	2,086,002
Lincoln	1,927,466	1,785,667	181,929	1,967,596	1,835,070
Logan	3,977,253	4,133.532	299,448	4,432,980	4,131,921
Noble	1,565,328	1,375,557	271,563	1,647,120	1,576,576
Oklahoma	3,287,188	3,859,763	526,570	4,386,337	4,421,699
Pawnee	2,271,785	1,920,093	....	1,920,093	1,600,708
Payne	2,480,910	2,231,416	46,202	2,277,618	2,169,851
Pottawatomie	1,680,493	1,761,542	172,192	1,933,734	1,784,448
Roger Mills	717,582	738,150	....	738,150	679,558
Washita	1,036,616	1,124,241	....	1,124,241	892,953
Woods	3,006,399	2,845,602	185,361	3,030,963	2,321,394
Woodward	1,846,702	2,114,738	271,721	2,386,459	1,883,864
Total	44,056,115	45,327,028	4,011,633	49,338,661	42,982,414

In connection with the subject of taxable property and tax rates the following table will be of special interest, showing, as it does, how small a percentage of the land which is occupied and cultivated and from which abundant crops are realized is now included in the tax lists:

County.	Acres listed for taxation.	Acres filed on by settlers.	Per cent of land filed on listed for taxation.	Value of farm land listed for taxation.	What value would be if all lands filed on were listed.
Beaver	112,859	255,085	44	$180,070	$409,900
Blaine	22,165	557,452	4	44,765	1,119,500
Canadian	278,015	454,355	61	747,312	1,225,100
Cleveland	208,222	828,000	63	789,717	1,174,100
Custer	19,906	588,886	3½	66,285	1,898,800
Day	7,912	149,831	5	18,822	376,400
Dewey	8,000	523,778	1½	22,073	1,471,500
Garfield	140,664	565,000	25	422,513	1,490,052
Grant	104,426	595,000	18	343,347	1,907,500
Greer	106,191	955,670	11	832,518	3,022,900
Kay	93,962	520,000	18	400,726	2,226.200
Kingfisher	348,043	460,000	75	946,103	1,261,500
Lincoln	152,538	520,000	30	575,297	1,917,600
Logan	384,775	440,000	87	1,821,890	2,094,100
Noble	29,555	865,000	8	112,256	1,403.200
Oklahoma	330,953	415,000	80	1,257,523	1,571,900
Pawnee	9,115	301,179	3	55,742	1,858.000
Payne	248,600	462,000	54	1,089,313	2,017,200
Pottawatomie	112,211	467,000	24	287,388	1,155,800
Roger Mills	12,492	562,594	2	40,620	2,061.000
Washita	21,000	590,560	3½	47,708	1,363.100
Woods	83,469	1,408,463	6	235,300	3,921,600
Woodward	40,631	868,676	4½	88,350	1,963,300
Total	2,875,704	12,373,529	27	9,575,638	38,875,250

These tables show that but 27 per cent of the lands homesteaded and occcupied by farmers has been listed for taxation. Homesteaders are, however, rapidly making their final proofs and acquiring title to their

BARTLETT PEARS, GROWN BY FRANK HOUSEHOLDER, LOGAN COUNTY.

lands, so that the remaining 73 per cent will soon be added to the tax lists. swelling the total valuation for taxation very largely.

The average assessed value of farm lands is $3.40 per acre. The average cash value of farm lands, as shown by table of actual sales for sixty days furnished by county registers of deeds, is $11.85 per acre.

TAXES.

The Territorial tax in Oklahoma has always been less than the State tax of most of the States of the Union, and the rate is reduced still lower this year.

The total Territorial tax levy for 1900 is 5.15 mills, divided as follows:

	Mills.
General Territorial tax	3.0
Erection and support of a Territorial normal school at Edmond	.5
Support of a Territorial normal school at Alva	.5
Erection and support of the Oklahoma University at Norman	.5
Support of the Agricultural and Mechanical College at Stillwater	.1
Support of the Colored Agricultural and Normal University at Langston	.1
Support of the school for the deaf and dumb	.4
Board of education fund	.05

In the first few years of the Territory local tax rates were often excessively high, but when the fact is considered that two years elapsed before any taxes could be collected, that land was not taxable, and what little personal property there was was listed for taxation at about 25 per cent of its real value, it can readily be seen that the tax rate was not oppressive or exorbitant. Now that there is more stability about property, more land to tax each year, and all county and city municipalities are on a cash basis, the local tax rates are not out of proportion to the immediate benefits received, and it is a significant fact that there was a reduction in every county of the Territory this year.

TERRITORIAL INDEBTEDNESS.

The total outstanding warrant indebtedness, as shown by the warrant register in the office of the Territorial treasurer, is (less cash in the treasury) $379,054.18. To this should be added the accrued interest on outstanding warrants, estimated to be $27,771, and the bonded school indebtedness, $48,000.

The general-fund warrants, issued from July 1, 1899, to June 30, 1900, is $169,044.67. Warrants redeemed and cash in treasury, same period, $134,814.25. Showing a casual deficiency for the year of $34,230.42.

PUBLIC SCHOOLS.

The public schools of Oklahoma are the equal of those of any State in the Union. The people who settled the Territory came from sections where they had enjoyed every educational advantage, and almost their first thought when settled in their new home was of schools for their children. The first public structure in almost every community was a schoolhouse, and the first and only bonds ever issued by the Territory were to aid in the erection of colleges—open free to all of her youth.

Even before the government of the Territory was organized sufficiently to levy and collect taxes schoolhouses were built in almost every town and in many counties by subscription, and in other places schools started in private houses. One of the first laws enacted in the Territory was the law establishing a system of public schools, and this has been revised and amended until the public-school system of Oklahoma is to-day one of which every citizen of the Territory is proud.

The first schoolhouses, of sod, logs, or cheap lumber, have given way to substantial and attractive frame or brick structures in nearly all of the 2,000 school districts and imposing brick or stone high-school buildings in the cities, while the magnificent structures of the Territory's five higher educational institutions will compare favorably with those of most advanced educational centers of the nation.

The educational interests of the Territory are under the general supervision of the superintendent of public instruction. The law also provides for a Territorial board of education, which in a large measure molds the educational policy of the Territory.

It has been the special effort of this board to improve the condition of the district school. To this end a graded course of study was prepared about four years ago, that the opportunity of the children to receive the full benefit of the common-school course might be improved, and under this plan common-school graduations take place in each county, the graduates receiving a common-school diploma.

This places an object before the scholar in the district schools and induces him to use his best endeavors to attain this object.

Examinations are held annually under the direct management of the Territorial board of education. The first examination was held on May 1 and 2, 1896. The result of the first examination was 207 graduates from 9 counties; the second, 173 from 11 counties; the third, 187 from 14 counties, and the fourth, at the close of the present school year, 349 from 23 counties.

No one need have any fears in coming to Oklahoma that excellent educational advantages for his children can not be secured, either in the country or in the cities and villages. Not a few districts have availed themselves of the privileges extended by act of the third legislative assembly authorizing two or more districts to establish and maintain a high school. All the cities and most of the smaller towns offer in addition to the regular common-school courses a high-school course free.

The design is to have these high schools prepare the students for entrance into the university, the normal schools, or the agricultural and mechanical college, thus connecting all public schools and colleges and making one complete system of schools, from the lowest to the highest.

In districts where there are colored children separate schools are maintained for their instruction, and a normal school and agricultural college is maintained for the higher education of the colored youth.

The legal requirements for teachers are equal to those in the States, and it is gratifying to record the estimate of the intellectual and moral worth of Oklahoma teachers. It is the desire of our teachers to know and use the best methods in teaching, that the best results may be obtained. The term of service and wages are superior to some of the States, and that this is beginning to be realized is shown by the frequent inquiry by nonresident teachers for positions. A high professional sentiment will make it difficult for the nonprogressive teacher to find employment, and the holding of annual normal institutes in every county of the Territory, together with the superior facilities of the normal schools of the Territory, offer the teacher every opportunity and inducement to advance to the front ranks of the profession.

When the great work for life and eternity that is being done by the 3,000 school teachers of the Territory among the more than 100,000 pupils in the public schools is carefully considered, one can but realize the true worth of a well-ordered and well-executed public-school system such as Oklahoma possesses, and which is the foundation stone of her present progress and future greatness.

The following tables give interesting information as to number of school districts, school population, attendance, receipts and expenditures for public schools, etc.:

Schools taught during the fiscal year ending June 30, 1899.

County.	Organized districts.	Districts in which schools were taught.	Schools taught.	Days schools were taught.	Average length of school in days.
Beaver	44	44	44	4,280	97
Blaine	81	71	71	5,280	74
Canadian	83	81	82	9,280	118
Cleveland	69	69	91	8,520	94
Custer	63	45	47	2,460	52
Day	19	11	11	920	84
Dewey	63	43	46	3,240	70
Garfield	127	127	128	11,600	91
Grant	123	128	126	11,980	95
Greer	79	79	79	5,760	73
Kay	88	88	88	10,60C	120
Kingfisher	122	115	122	11,520	94
Lincoln	183	131	144	12,260	85
Logan	97	97	108	12,440	115
Noble	59	59	68	5,960	88
Oklahoma	84	84	102	7,780	76
Pawnee	63	62	70	4,380	68
Payne	99	99	101	12,740	126
Pottawatomie	109	108	109	8,920	82
Roger Mills	24	14	14	1,340	96
Washita	81	61	62	2,760	45
Woods	235	206	212	15,380	73
Woodward	63	60	60	5,540	92
Total	2,008	1,877	1,985	174,940	998

Average daily attendance for the year ending June 30, 1899.

County.	Male.	Female.	Total.
Beaver	219	216	435
Blaine	721	983	1,704
Canadian	1,288	1,265	2,558
Cleveland	1,208	1,222	2,430
Custer	369	381	750
Day	66	56	122
Dewey	528	587	1,115
Garfield	1,802	1,679	3,481
Grant	1,419	1,384	2,803
Greer	1,164	1,136	2,300
Kay	1,451	1,297	2,748
Kingfisher	1,613	1,488	3,101
Lincoln	1,480	1,491	2,971
Logan	1,802	1,899	3,701
Noble	781	711	1,492
Oklahoma	1,461	1,503	2,964
Pawnee	1,121	1,085	2,206
Payne	1,443	1,405	2,848
Pottawatomie	2,138	1,934	4,072
Roger Mills	189	190	379
Washita	716	764	1,480
Woods	1,689	1,611	3,300
Woodward	424	392	816
Total	25,092	24,679	49,771

Number of teachers employed and the average salary paid for the year ending June 30, 1899.

County.	Male.	Female.	Total.	Average salary paid.		
				First grade.	Second grade.	Third grade.
Beaver	16	28	44	$50.00	$32.25	$25.00
Blaine	27	43	70	29.15	26.29	23.81
Canadian	32	79	111	32.12	30.84	31.10
Cleveland	51	40	91	48.21	37.36	31.75
Custer	16	34	50	30.00	24.40	26.75
Day	4	7	11	35.00	32.50	27.33
Dewey	15	30	45	35.83	21.68	18.37
Garfield	61	81	142	32.81	32.64	29.38
Grant	60	70	130	38.91	29.61	26.14
Greer	37	34	71	39.19	34.14	30.66
Kay	48	69	117	39.55	24.43	29.79
Kingfisher	58	76	134	37.33	31.52	27.63
Lincoln	80	85	165	32.35	28.45	27.04
Logan	44	104	148	43.40	33.42	27.35
Noble	22	46	68	35.88	30.85	27.27
Oklahoma	39	76	115	50.76	30.02	28.43
Pawnee	22	49	71	29.12	27.75	21.91
Payne	50	70	120	37.22	29.87	25.71
Pottawatomie	71	63	134	46.66	34.36	30.40
Roger Mills	10	5	15	41.50	35.00	30.00
Washita	37	24	61	31.77	29.55	28.66
Woods	92	126	218	29.46	25.61	21.63
Woodward	22	38	60	41.38	31.92	32.36
Total	914	1,277	,191	....	....	....

Enumeration of persons between the ages of 6 and 21 years for the year 1899.

County.	White.			Colored.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Beaver	478	471	949	....	....	....	478	471	949
Blaine	1,271	1,222	2,493	145	155	300	1,416	1,377	2,793
Canadian	2,363	2,251	4,614	57	71	128	2,420	2,322	4,742
Cleveland	3,096	2,773	5,869	91	97	188	3,187	2,870	6,057
Custer	1,661	1,473	3,134	20	31	51	1,681	1,504	3,185
Day	202	197	399	....	....	....	202	197	399
Dewey	1,146	1,089	2,235	4	3	7	1,150	1,092	2,242
Garfield	3,133	2,902	6,035	39	58	97	3,172	2,960	6,132
Grant	2,685	2,431	5,116	10	20	30	2,695	2,451	5,146
Greer	2,559	2,361	4,920	... .	1	1	2,559	2,362	4,921
Kay	3,260	2,933	6,193	38	29	67	3,298	2,962	6,260
Kingfisher	2,603	2,384	4,987	493	430	923	3,096	2,814	5,910
Lincoln	4,206	3,841	8,047	301	305	606	4,507	4,146	8,653
Logan	2,975	2,833	5,808	874	921	1,795	3,849	3,754	7,603
Noble	1,620	1,536	3,156	82	69	151	1,702	1,605	3,307
Oklahoma	3,324	3,159	6,483	402	467	869	3,726	3,626	7,352
Pawnee	2,155	1,970	4,125	178	184	362	2,333	2,154	4,487
Payne	3,416	3,120	6,536	118	97	215	3,534	3,217	6,751
Pottawatomie	5,197	4,686	9,883	145	124	269	5,342	4,810	10,152
Roger Mills	706	692	1,398	4	16	20	710	708	1,418
Washita	2,441	2,165	4,606	....	....	....	2,441	2,165	4,606
Woods	4,984	4,604	9,588	31	26	57	5,015	4,630	9,645
Woodward	1,047	979	2,026	....	....	....	1,047	979	2,026
Total	56,528	52,072	108,600	3,032	3,104	6,136	59,560	55,176	114,736

STUDY HALL NORTHWESTERN NORMAL SCHOOL, ALVA.

Enrollment in public schools, 1899.

County.	White.			Colored.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Beaver	335	336	671	....	....	....	335	336	671
Blaine	890	920	1,810	94	95	189	984	1,015	1,999
Canadian	1,983	1,818	3,801	23	38	61	2,006	1,856	3,862
Cleveland	2,370	2,309	4,679	67	70	137	2,437	2,379	4,816
Custer	663	553	1,216	....	3	3	663	556	1,219
Day	106	93	199	....	....	....	106	93	199
Dewey	636	574	1,210	....	....	....	636	574	1,210
Garfield	2,559	2,404	4,963	25	32	57	2,584	2,436	5,020
Grant	2,135	1,974	4,109	10	17	27	2,145	1,991	4,136
Greer	1,673	1,569	3,242	....	....	....	1,673	1,569	3,242
Kay	2,763	2,426	5,189	15	12	27	2,778	2,438	5,216
Kingfisher	2,274	2,093	4,367	341	293	634	2,615	2,386	5,001
Lincoln	3,037	2,990	6,027	200	189	389	3,237	3,179	6,416
Logan	2,543	2,409	4,952	675	632	1,307	3,218	3,041	6,259
Noble	1,474	1,366	2,840	....	....	....	1,474	1,366	2,840
Oklahoma	2,522	2,281	4,803	346	385	731	2,868	2,666	5,534
Pawnee	1,758	1,548	3,306	30	30	60	1,788	1,578	3,366
Payne	2,748	2,536	5,284	39	23	62	2,787	2,559	5,346
Pottawatomie	3,726	3,388	7,114	101	89	190	3,827	3,477	7,304
Roger Mills	289	275	564	....	....	....	289	275	564
Washita	1,467	1,257	2,724	....	....	....	1,467	1,257	2,724
Woods	3,878	3,534	7,412	31	24	55	3,909	3,558	7,467
Woodward	646	578	1,224	....	....	....	646	578	1,224
Total	42,475	39,231	81,706	1,997	1,932	3,929	44,472	41,163	85,635

Receipts for the year ending June 30, 1899.

County.	Balance on hand June 30, 1898.	From apportionment of Territory and county school fund.	District tax.	Sale of bonds.	Other sources.	Total receipts.
Beaver	....	$2,395.38	$5,928.25	$200.00	....	$8,518.63
Blaine	$1,987.36	2,801.39	5,004.82	1,020.00	$240.39	11,053.96
Canadian	10,407.06	9,145.67	28,045.06	677.60	743.89	49,019.28
Cleveland	6,547.66	11,995.08	20,538.81	1,700.00	....	40,781.55
Custer	1,601.09	2,692.50	6,894.24	1,950.00	228.94	13,366.77
Day	730.08	543.46	3,342.74	....	....	4,616.28
Dewey	867.67	1,672.92	3,904.87	....	16.31	6,461.77
Garfield	....	5,687.62	....	....	....	5,687.62
Grant	5,165.97	10,963.76	17,665.31	3,682.58	277.50	37,755.12
Greer	1,646.88	5,343.27	10.436.95	5,940.00	1,843.11	25,210.21
Kay	9,917.30	12,687.75	44,108.24	....	....	66,713.29
Kingfisher	7,396.25	6,794.74	26,942.03	848.20	248.10	42,229.32
Lincoln	7,377.01	11,186.72	22,075.00	1,565.00	1,743.50	43,947.23
Logan	9,474.99	10,746.25	38,723.00	....	1,644.91	60,589.15
Noble	3,621.95	7,433.03	14,088.00	440.00	336.41	25,919.39
Oklahoma	7,515.09	9,479.75	50,077.12	754.41	1,203.97	69,030.34
Pawnee	2,575.29	4,412.44	10,704.25	1,032.15	....	18,724.13
Payne	5,804.97	9,574.80	21,971.00	3,157.48	2,022.81	42,531.06
Pottawatomie	3,103.46	12,650.78	23,196.98	1,610.00	2,579.51	43,140.73
Roger Mills	1,229.10	1,235.17	2,496.62	....	....	4,960.89
Washita	1,976.62	4,554.72	5,775.02	925.00	616.64	13,848.00
Woods	6,923.18	13,684.27	34,785.55	....	2,541.53	57,934.58
Woodward	7,517.35	5,730.37	16,633.77	....	1,576.59	31,458.08
Total	103,386.33	163,411.84	413,332.63	25,502.42	17,864.11	723,497.33

Expenditures for the year ending June 30, 1899.

County.	Teachers' salaries.	Sites, buildings, and furniture.	Rents, repairs, and incidentals.	Libraries and apparatus.	Other purposes.	Total expenditures.	Balance on hand June 30, 1899.
Beaver	$6,290.00				$588.85	$6,878.85	$1,363.60
Blaine	4,828.88	$1,217.94	$672.13		240.39	6,959.34	4,125.80
Canadian	23,594.53	1,942.19	3,865.88	$758.91	1,273.58	31,435.04	17,322.60
Cleveland	22,480.57	4,897.83	3,924.84	176.34	1,295.22	32,774.80	8,582.93
Custer	5,681.21		3,008.10			8,689.31	4,854.20
Day	1,485.63	598.38	113.30	162.40	97.80	2,457.51	1,982.22
Dewey	3,636.50				1,325.63	4,962.13	1,084.08
Garfield							
Grant	20,308.25	5,446.01	4,206.59	103.00	1,638.46	31,702.31	6,221.06
Greer	12,480.97	8,109.91	1,718.06	153.54	251.35	22,713.83	1,958 13
Kay	54,853.00					54,853.00	10,415.21
Kingfisher	21,944.23	3,545.37	3,385.61	940.70	489.98	30,305.89	10,442.51
Lincoln	20,716.05	5,970.10	3,980.84	477.75	1,702.71	32,797.45	10,657.90
Logan	30,684.48	1,042.51			10,460.56	42,187.55	
Noble	12,438.00	600.00	3,700.00	100.00	2,804.18	19,642.18	5,293.46
Oklahoma	29,092.95	7,735.29	5,706.20	255.28	18,220.65	61,010.37	7,252.15
Pawnee	11,415.00	890.00	300.00	.50	996.00	13,601.50	4,002.82
Payne	19,801.79	4,540.09	4,268.78	471.92	1,541.74	30,624.32	6,297.92
Pottawatomie	22,245.73	4,065.71	2,270.06	285.41	7,189.33	36,026.24	5,302.96
Roger Mills	2,975.00					2,975.00	1,256.85
Washita	7,407.75	1,690.54	612.18	128.64	927.97	10,767.08	
Woods							12,473.43
Woodward	10,616.88	2,850.91	1,517.34	625.27	3,606.88	19,217.28	12,190.82
Total	344,977.40	55,162.78	43,199.91	4,589.66	54,651.23	502,580.98	133,080.65

HIGHER INSTITUTIONS OF LEARNING.

In addition to her excellent public school system Oklahoma has five higher institutions of learning, viz, University, normal school, northwestern normal school, agricultural and mechanical college, and colored agricultural and normal university, which are not excelled by the similar institutions of any State in the Union.

The aggregate attendance at all during the past year was 1,632, which number will be greatly increased, possibly doubled, the coming year.

These institutions are all open free to students from Oklahoma and Indian Territory, thus affording the highest educational advantages to the rising generations of this coming great State.

All are in a most flourishing condition, accomplishing a great work, and promising still greater things for the future.

UNIVERSITY OF OKLAHOMA.

The university is founded upon the authority of an act of the legislature of the Territory of Oklahoma entitled "An act to locate and establish the University of Oklahoma." The act provided that when $10,000 and 40 acres of land be donated to the Territory by the city of Norman the institution should be located at that place. These requirements having been met, the university was established at Norman in 1892.

Norman, the seat of the university, is the county seat of Cleveland County. It is a growing town of 3,500 inhabitants, situated 18 miles south of Oklahoma City, on the Atchison, Topeka and Santa Fe Railroad. It stands on high ground, sloping to the Canadian River, and is preeminently healthful. The winters are mild and the atmosphere dry and bracing. The citizens of Norman are from all parts of the

Territorial University at Norman. Trees grown in Five Years.

United States and are united in their hearty sympathy with educational matters.

The law establishing the university states the scope and purposes of the institution as follows:

(6787) SEC. 9. The object of the University of Oklahoma shall be to provide the means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits, in the instruction and training of persons in the theory and art of teaching, and also the fundamental laws of the United States and this Territory in what regards the rights and duties of citizens.

* * * * * * *

(6789) SEC. 11. The university shall be open to female as well as to male students, under such regulations and restrictions as the board of regents may deem proper, and all able-bodied male students of the university, in whatever college, may receive instruction and discipline in military tactics, the requisite arms for which shall be furnished by the Territory.

The university is supported by a general tax of one-half mill upon each dollar of valuation on the assessment roll of the Territory. In addition to this, section 13 in each township in what is known as the Cherokee Outlet was reserved from settlement for university, normal school, and agricultural college purposes in the proclamation of the President of the United States opening those lands to settlement. The lands so reserved have been appropriated for the above purposes by act of Congress and have been leased for the benefit of the institutions named.

The main building, of stone and pressed brick, contains twenty-six recitation and reception rooms and a large chapel. It is situated on a fine campus of 40 acres and lies at a good elevation overlooking the surrounding country, 1 mile south of the business portion of town. The campus and approaching boulevard have been set out in trees. At present there are 12 acres planted in elm, ash, locust, etc.

The university library, to which all students have access, contains several thousand volumes embracing all departments of literature and science.

The university organization consists of the following schools: (1) college of arts and sciences, (2) school of pharmacy, (3) premedical department, (4) school of music, (5) preparatory school.

The college of arts and sciences embraces classical, philosophical, English, and scientific courses which lead to the degrees of A. B. and B. S. The school of pharmacy covers two years' work, and leads to the degree of pharmaceutical chemist. In the premedical course is offered the first two years of a regular medical course. The school of music embraces a preparatory course, a teacher's course, an artist's course, and a graduate course, at the completion of which certificates to that effect are granted by the university. The preparatory school covers a three years' course leading to the freshman class.

The enrollment in the different departments for the past year was as follows:

College of arts and sciences:	
Graduate students	1
Seniors	2
Juniors	5
Sophomores	9
Freshmen	25
Special	1
Premedical department	4
School of pharmacy	44
School of music	59

Preparatory school:	
Senior	27
Middle	43
Junior	102
	322
Number included under two heads	27
Total	295

The faculty of the institution includes twenty-two educators of recognized standing and ability, determined to make the university second to none. I quote the following from the year book of the university, recently issued, as outlining fully the policy and aim of the institution:

> To the Public:
>
> The board of regents and faculty cordially invite the attention of the public to the plans and purposes of the University of Oklahoma.
>
> The people of the Territory pay a regular tax for the purpose of furnishing, practically free, to their young men and women instruction of the highest order. This conception will be carried into effect to the limit of the resources of the institution. Believing it to be as much a part of the public school system of the Territory as any public school, the management proposes to unite with the public school system of the Territory in making its work articulate with the work of the graded elementary schools, so that the course of study provided by the Territory may be continuous from the lowest primary in the public schools to the highest class in the university. It is their wish to furnish information to all who are interested in knowing about its work and resources, as well as to those who contemplate an advanced course of study. The president will be particularly interested in corresponding with anyone who may desire an education, but who may feel either that his means will not permit such a course or that the time required for completing a course of study may be too long for his time of life. It is hoped that no one will conclude that he is too poor or too old to take a course of study until after he has gone over the matter in correspondence with the president or some member of the faculty. Since this institution is established and maintained by the Territory for its citizens, we desire to have each family in the Territory inform us as to what the university can do for the young men and women who are to be its future citizens and who will control the destiny of the future State.

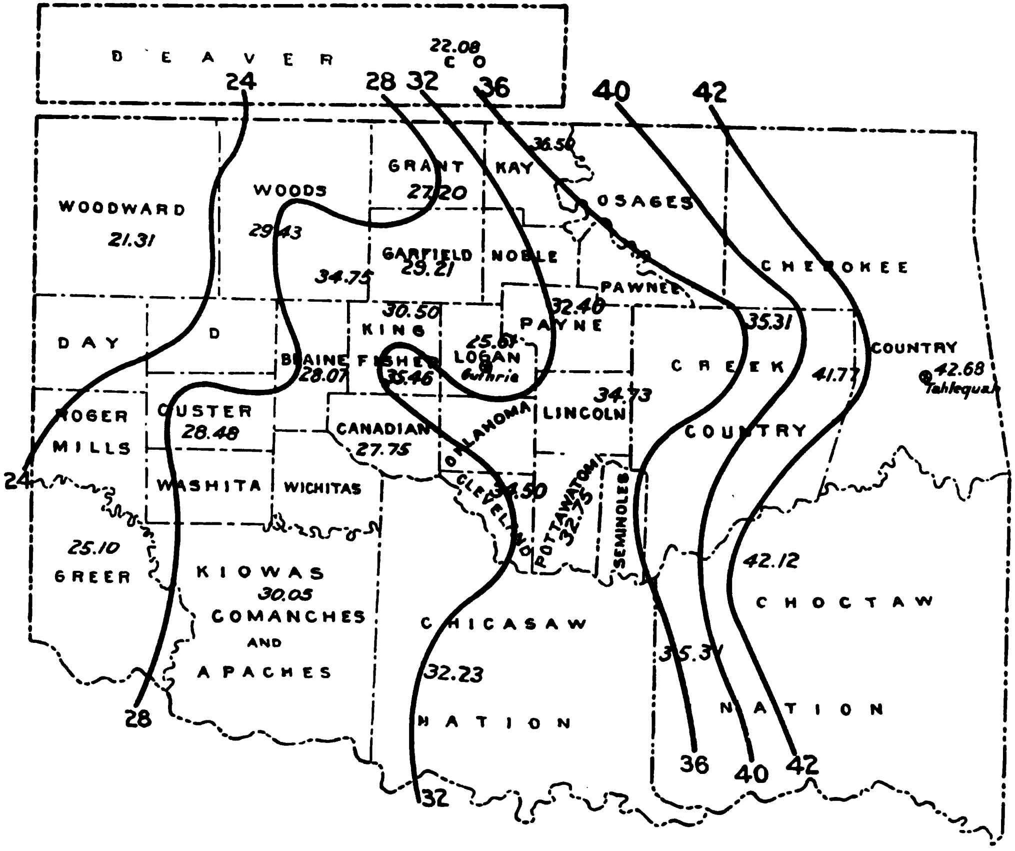
AGRICULTURAL AND MECHANICAL COLLEGE.

The Oklahoma Agricultural and Mechanical College was established and located at Stillwater by an act of the Territorial legislature which took effect December 25, 1890, accepting the provisions of the Federal statutes in aid of colleges for the benefit of agriculture and the mechanic arts. The town of Stillwater was required to vote bonds in the sum of $10,000 and to provide not less than 80 acres of land. The bonds were voted and 200 acres of land provided.

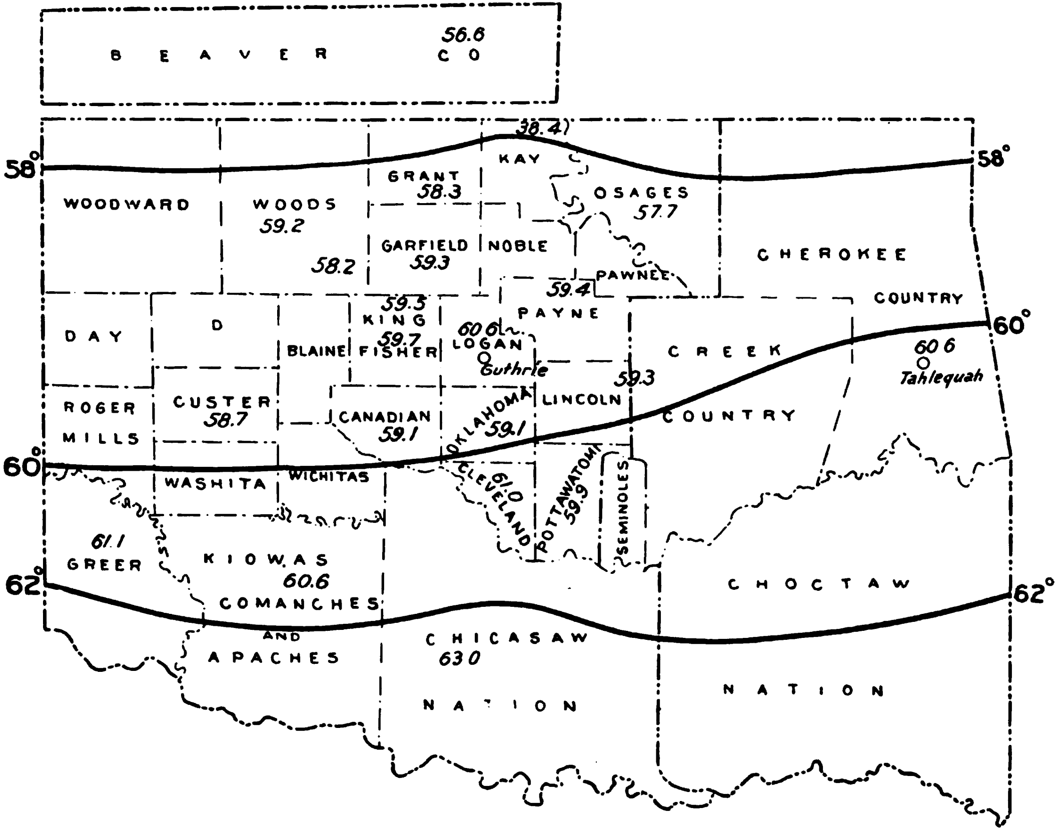
The college opened in the fall of 1891 with about 60 students and 4 instructors. Its sessions were held in various church buildings until the fall of 1894, when a brick building, now known as the assembly building, was occupied. Since that time other structures have been added until now four brick or stone buildings and three wooden buildings are used in instruction.

Up to the time of my last annual report the attendance had gradually increased to 219 and the faculty had grown to 17 members. During the last year the institution has made a most gratifying growth, the attendance having increased from 219 to 367, or nearly 70 per cent. These students come from nineteen counties in the Territory, and there are representatives from thirteen States or Territories and from one foreign country.

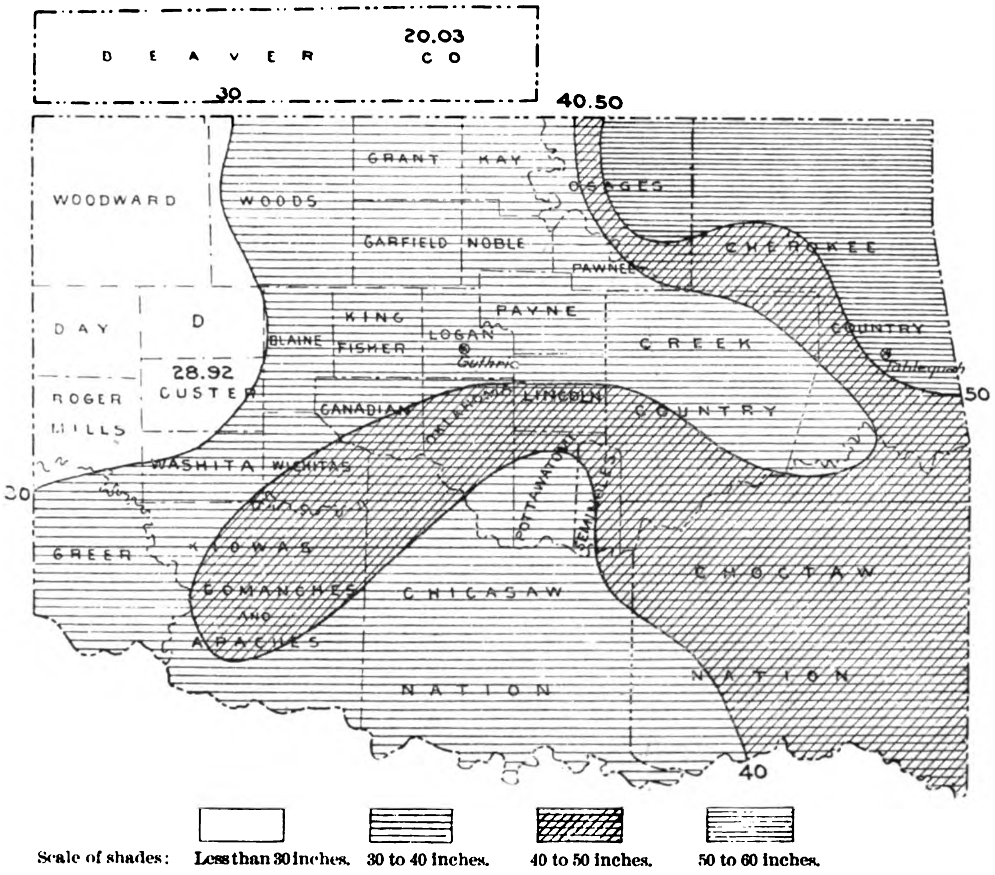
The equipment of the institution has been practically doubled within the same time, the value of apparatus standing at $60,362.60 as against $32,817.68 at the time of the last report.



AVERAGE ANNUAL PRECIPITATION (IN INCHES), 1891 TO 1900.



AVERAGE ANNUAL TEMPERATURE, 1891 TO 1900.



TOTAL PRECIPITATION FOR 1899.

The mechanical engineering department, including electrical engineering, is now equipped with $20,000 worth of machinery and appliances. A department of domestic economy has been established and equipped. The departments of chemistry, zoology and, veterinary science, botany and entomology, and horticulture have received substantial additions to their equipment. The agricultural department has been strengthened by the purchase of a fine herd, representing the Hereford, Short Horn, Red Polled, Aberdeen Angus, and Jersey breeds of cattle, and is now installing breeds of swine representing the Berkshires, Poland Chinas, Duroc-Jerseys, and Chester Whites, and of sheep representing the Shropshires, Southdowns, Merinos, and Cotswolds.

Two new buildings have been erected during the year—the library building and the chemistry building—both handsome and commodious structures, built of brick and stone. The faculty has been increased to 20 members, every one being an able and earnest educator.

The resources of the college now amount, all told, to about $50,000 per year. Of this $37,500 comes from the Government to the college and experiment station (Morrill and Hatch funds), and the greater portion of the remainder from the Territory.

Six regular courses are given. Each of these courses covers four years and leads to the degree of bachelor of science. Students of mature years may elect special work under the direction of the faculty. A two years' preparatory course is offered. Special courses are given in stenography, typewriting, and printing, and a special short course (eight weeks) is given during the winter term in agriculture and mechanic arts.

Our people are gradually getting over the erroneous impression that the instruction in this institution is devoted almost wholly to agriculture and the mechanic arts. While special and thorough courses are given in these lines, the scope of the work is far broader. The institution gives also approved training in the English language and literature, in German and Latin, in biology, in chemistry, in domestic economy, in political science and history, in higher mathematics, etc.

A gratifying feature in the work of this institution is the warm attachment manifest in the student body to the college. Its students, devoted as they are to its interests, constitute its most effective advertisement. Another notable fact is that of its 24 graduates all, except 2 young women at home, hold good and remunerative positions.

THE TERRITORIAL NORMAL SCHOOL.

The legislature of 1891 enacted that the "normal school for Oklahoma" be located at Edmond, an ideal college town on the Santa Fe, midway between Guthrie and Oklahoma City. Oklahoma County donated $5,000 in bonds. Edmond gave 40 acres of land and bonds amounting to $2,000. With this small amount the building was begun in the summer of 1892. The legislature of 1894 donated an additional amount for the completion of the building. In the past eight years many valuable improvements have been made until to-day it is a fine and commodious structure of brick and red sandstone, costing upward of $50,000. With broad halls and well-equipped class rooms, heated by the Smead system, it offers every opportunity to student and teacher.

The normal school is maintained through a half-mill levy on the assessed valuation of the Territory and one-fifth of the rentals arising from section No. 13, in the Cherokee Outlet, according to the proclamation of the President of the United States.

The special function of the normal school is to train and to equip teachers. However, a strong course of study affords to those not wishing to teach ample opportunity for a broad and liberal education. The diploma of graduation is a five-year certificate in Oklahoma, and is renewable by the Territorial superintendent upon evidence of satisfactory work in teaching. Tuition in all departments is free.

The first school year opened November 9, 1891, with 23 students in attendance. The attendance was gradually increased until last year it reached 322, a gain of nearly 30 per cent over the preceding year. The prospects for the coming year are very flattering, many of the young men and women of the Territory who look forward to a life work in the profession of teaching having signified their intention of attending. However, the limited facilities of the town of Edmond lessen the attendance. It is hoped that at an early day the town will see its way clear to build boarding halls, where students may be accommodated as well as at home.

The spirit of the institution is indicated by the work of the graduates. The first class graduated in 1897, consisting of 5 members. The class of 1898 numbered 11; of 1899, 10; of 1900, 20. Nearly all of these are either laboring in the schools of Oklahoma or attending some Eastern institution in order to qualify themselves more thoroughly for teaching in our schools.

The average age of the students last year was 20, and is increasing year by year. A notable fact worthy of consideration is that the great mass of the students come from the farm, and truly may it be said, "This is the farmers' school." Another fact worthy of note is the growth in the spirit and demand for a higher education. As our people advance in the sharp struggle for life and accumulate a competence they are desirous of specially trained teachers, and this for the advancement of their own children. Nearly all of the students labor in the field, thus by their own hands earning the means to realize their ambition for advanced training. The earnestness of purpose, the consecration of life to the work, the honesty and uprightness of the daily conduct of the students is most commendable.

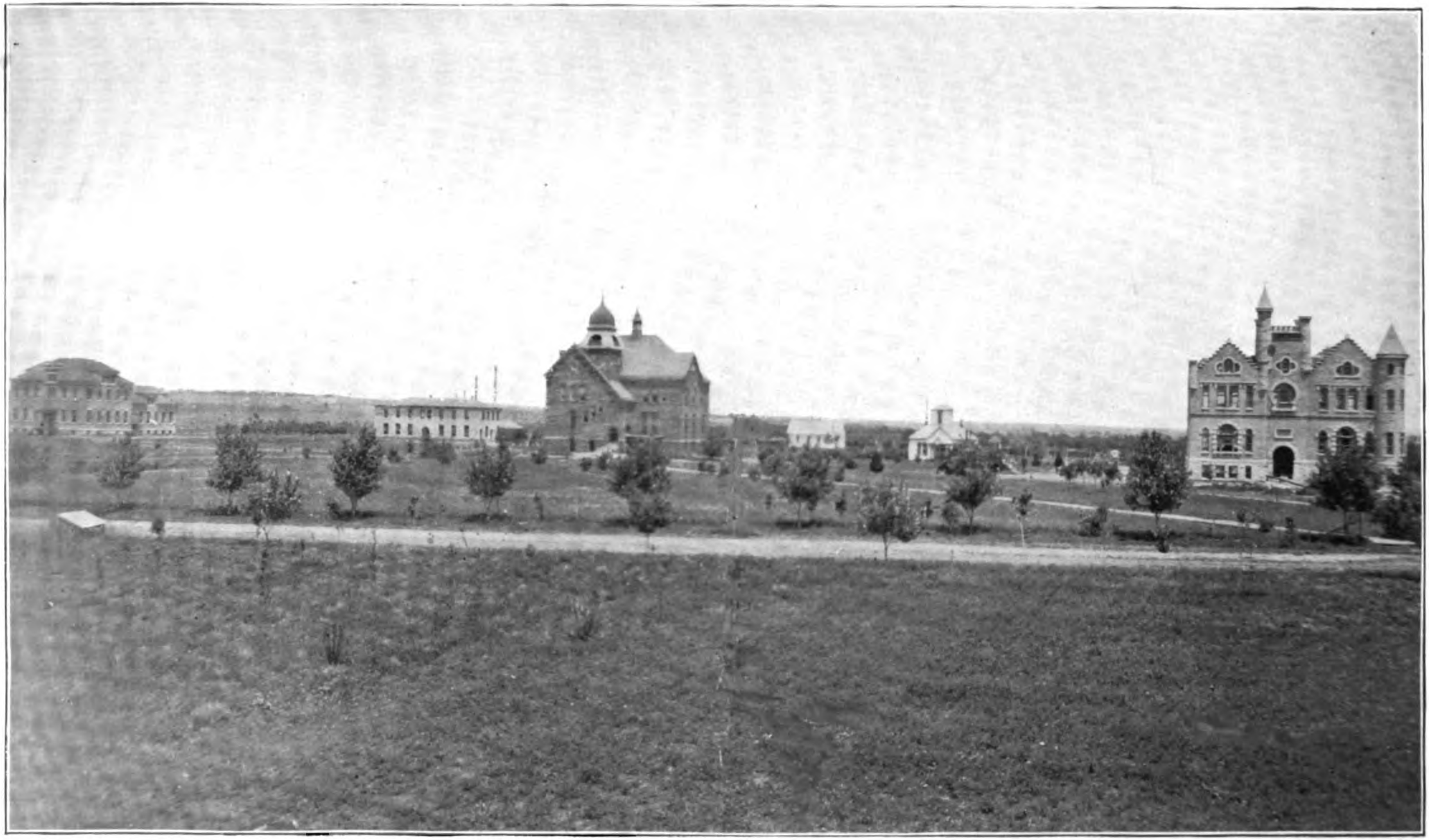
The faculty, now strong and well organized, consists, besides the president, of 7 gentlemen and 5 ladies, all able educators.

The school year is of forty weeks, divided into convenient terms. The outlook for increased attendance next session is most encouraging and may be conservatively estimated at 400.

NORTHWESTERN NORMAL.

The Northwestern Territorial Normal School was founded by the legislative assembly in 1897. In August of that year the board of education for the normal schools of Oklahoma elected the president for the new school and two teachers. The school was opened in the Congregational Church at Alva September 20, with an enrollment of 55, which grew that year to 166. The following year the school was given an additional teacher, and in addition to the Congregational the Baptist Church. The enrollment reached 211.

On the 10th of March, 1898, the board of education let the contract for the magnificent building now occupied by the school. The struc-



AGRICULTURAL AND MECHANICAL COLLEGE AND EXPERIMENT STATION AT STILLWATER.

ture was somewhat more than a year in progress of erection. The school assembled in its new and permanent quarters for the first time September 11, 1899. The enrollment for that year, which has just closed, reached 413, making the Northwestern the largest institution of learning in Oklahoma. The average age of our students for the past year was 19 years and 6 months.

The Northwestern Normal occupies a delightful and healthful site of 40 acres, sloping to the north overlooking the town of Alva, nestling in a natural basin some 3 miles in diameter on the Salt Fork of the Arkansas River. Alva is the county seat of Woods County, which lies next to the Kansas line and just west of the median line of Oklahoma, and is reached by the Atchison, Topeka and Santa Fe Railway. The town has a population of about 2,000 and the county 32,000. As is general in a place of this character, the people are refined, cultured, and liberal, and are making Alva an ideal college town.

The Northwestern Normal School building, in point of beauty of architecture and facility of arrangement, is ranked by competent judges to be among the very best buildings of its kind in America. It has a frontage of 157 feet and a depth of 122 feet. It is built of white limestone and pressed brick. Counting all four stories there are thirty-six rooms in the structure. The class rooms are large and airy, none being less than 30 by 40 feet. The entire structure is heated by the fan system, so that it is thoroughly ventilated at all times. The institution has its own gas plant, in a separate building, which furnishes light for the offices, library, laboratories, assembly rooms, and halls.

Among the Christian denominations having organizations in Alva are the Methodist, Congregational, Christian, Presbyterian, Baptist, Episcopalian, and Catholic. The Sunday schools are in a thriving condition.

The climate in this section is good and the healthfulness is phenomenal. Students of this institution hardly know what sickness is, and at no time has the progress of the school been molested by an epidemic.

The function of this institution is the preparation of teachers for the public schools of Oklahoma. With this end in view, the major work in both the regular courses is along the line of the science and art of teaching. But, as in nearly all other normal schools, there is maintained here a thorough system of academic instruction through which the technical work of the teacher is demonstrated and taught and he himself is grounded in that thoroughness in elementary scholarship essential in his work. This fact makes it possible for this school to offer exceptional advantages to those seeking a general education or preparing for some special line of work in technical schools or colleges.

The fifth legislative assembly provided amply for the support of the school. However, being a new school, the board has had to draw so heavily on the funds for furniture and apparatus that the institution has been quite crippled as compared with the other Territorial schools, who enjoyed exactly the same fund, but were forced to use none of it for furniture and apparatus. The next legislature of Oklahoma will no doubt provide this institution with a practice school and an ample library fund.

The enrollment in the Northwestern Normal for the next year is expected to be from 500 to 550 by those in charge of the school.

The faculty of the institution numbers 15 members, every one a specialist in his or her line and an enthusiast in the interest of the institution. They work hard for the best interests of the students in school and out and have fostered a spirit of loyalty to the institution not surpassed in any of the old colleges or universities in the East.

LANGSTON UNIVERSITY.

The agricultural and normal university at Langston is the Territorial institution for the higher and industrial education of the colored people of Oklahoma. Its record during the past year shows that it has made greater progress than was expected by its founders.

The faculty consists of 7 teachers, 3 more than it had during the first year. The enrollment at the close of the year was 187 students and 48 model-school scholars. The average daily attendance was 135, the average age of the students 17, 80 per cent being from the farms of the Territory, and 65 per cent self-supporting. Provision has been made for six courses of study, as follows: Elementary, normal, preparatory, collegiate, agricultural, and mechanical. More land has been purchased. Eighty acres have been added to the 40 which the citizens of Langston donated to the school, making a total of 120 acres of land, the greater part of which will be used in connection with the agricultural department.

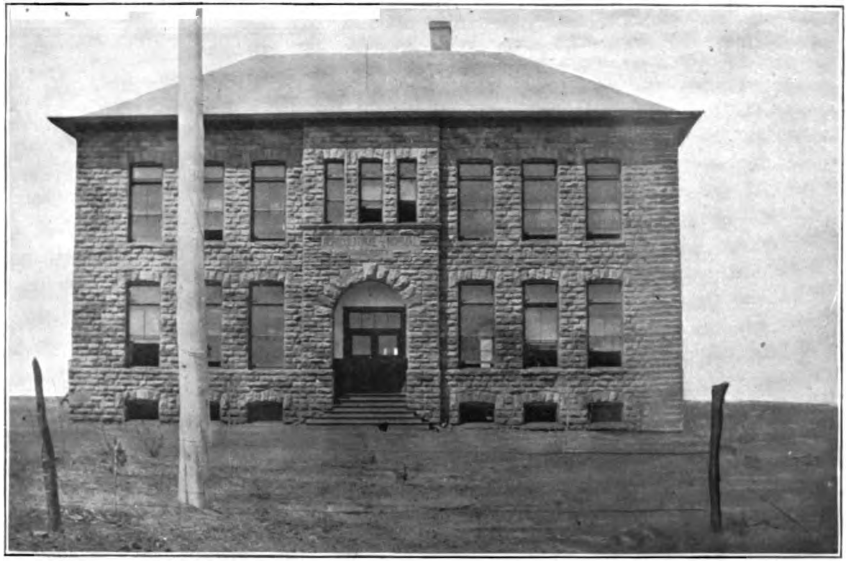
The school has three buildings, a main building, which, when completed according to the plans of the regents, will accommodate at least 500 students; a mechanical building in which the young men will be taught the mechanic arts, and a dormitory for young women, which is under the constant care and supervision of a competent matron. All these buildings are substantial structures and are well supplied with furniture.

In my last annual report I made the following statement concerning Langston University:

> In the establishment of this school and making provisions for its maintenance during the present year the legislative assembly directed that $15,000 of the accumulated Morrill fund in the hands of the original agricultural and mechanical college at Stillwater might be transferred to this school for the use and benefit of colored people who would hereafter be excluded from Stillwater College, but the Interior Department declined to approve of such transfer because under the terms of the first agreement between the Territory and the Government said funds were to be used for the Stillwater College only. It seems to me, now that the colored race is to be excluded from further participation in the Stillwater school, and are provided with a separate school, the funds on hand might be equitably divided as provided by the legislative assembly, and I respectfully urge that you will ask Congress to remedy the apparent difficulty by the passage of an act approving and ratifying the act of the legislative assembly above referred to.

After the recommendation was made the regents, at my suggestion, adopted a resolution requesting our Delegate in Congress to introduce the desired bill. He at once complied with the request, and the bill which he introduced was passed by both Houses of Congress without meeting with any serious opposition As a result of the passage of this act the regents will soon have the university supplied with books for the library, apparatus for the scientific department, stock and implements for the farm, and tools and material for the mechanical department.

The outlook for this institution is indeed very bright, and it is destined to become an important factor in the uplifting and advancing of the colored race in Oklahoma. The young people have shown a deep interest in the subject of education and industrial training, and the



MAIN COLLEGE BUILDING, COLORED AGRICULTURAL AND NORMAL UNIVERSITY, LANGSTON.

faculty are all educators of experience and ability, who take a deep interest in the students in school and out, and are doing everything possible to help them.

OTHER SCHOOLS AND COLLEGES.

In addition to the excellent public schools and the magnificent higher institutions of learning conducted by the Territory there are a number of other schools and colleges of a private or sectarian character.

The most prominent of these is the Congregational College at Kingfisher, which is fast taking rank with the Territorial institutions and has an attendance of about 125.

The oldest institution of learning in the Territory is the Sacred Heart College, located at Sacred Heart Mission, in Pottawatomie County. This was first established by the Jesuit Fathers twenty three years ago, and for a long time was exclusively an Indian school. Nearly 100 white boys are now being educated there.

The Catholics also have a college for girls at Guthrie, and the Friends have an academy at Stella, Woods County, and schools at several other points. Good business colleges flourish at Guthrie, Oklahoma City, and Shawnee, and the Methodists, Presbyterians, Congregationalists, Catholics, and Episcopalians have mission schools among the Indian tribes in the southwest.

The Baptists have located a college at Blackwell and are putting up a fine building. The Presbyterians have started an academy at Newkirk.

INDIAN EDUCATION.

The Government conducts a large number of schools for the education of the Indian youth of the Territory.

Foremost among these is the Chilocco Industrial School, located in Kay County, 5 miles south of Arkansas City, Kans. The institution is located upon a reservation of 8,640 acres, about 600 of which are in cultivation, and with its many structures is almost a little city in itself. Both the Santa Fe and Frisco railways pass through the reservation and have flag stations at the school.

The principal buildings, viz, girls' home, school building and chapel, boys' home, dining hall, kitchen and laundry, workshop, cattle shed and hospital, are all of stone, while five cottages, the office, a horse and cattle barn, tool house, and granaries are of frame. The improvements cost about $150,000. Other structures are in course of erection, all of stone quarried upon the reservation.

The boys and girls, young men and young women, gathered here from all the different tribes of Oklahoma and Indian Territory, as well as from many other tribes of the West, are given a fair education, not only in the ordinary school and college branches, but in farming, the trades, and domestic work of various kinds, so that they leave the school fitted to cope with life in all its phases and to compete fully with their white brothers and sisters. This school is most excellently managed in every department, and the progress being made by the scholars is truly remarkable. About 400 pupils were in attendance the past year, and in the manual-training departments, in shops, laundry, and household, are made the clothing and shoes of the scholars, while the farm is made very profitable by the labor of the scholars learning the art of the successful tilling of the soil. In the school are literary and debating societies that compare favorably with those of any white college, the largest active Christian Endeavor Society and Sunday school in the Territory, and the commencement exercises are of a high order and of deep interest to the hundreds of white visitors.

The United States Government, through the Indian Bureau, offers to pay any school district in the Territory taking Indian scholars, $10 per capita per quarter on the average attendance of Indian pupils, a rate which is highly remunerative and should induce many districts to test the value and practicability of this proposed plan of coeducation of the races. But eight districts took advantage of this offer the past year, the total attendance being 58 Indian pupils.

The Government maintains fourteen reservation boarding schools and two day schools for the Indians of the Territory, as follows:

School.	Number in attendance.	School.	Number in attendance.
BOARDING SCHOOLS.		BOARDING SCHOOLS—continued.	
Absentee Shawnee	97	Red Moon	52
Arapahoes	127	Riverside	99
Cheyenne	162	Sac and Fox	108
Fort Sill	116	Seger	128
Kaw	50		
Osage	175	DAY SCHOOLS.	
Otoe	89	Kiowa	30
Pawnee	129	Whirlwind	27
Ponca	105		
Rainy Mountain	93	Total attendance	1,164
Cantonment	79		

SCHOOL LANDS.

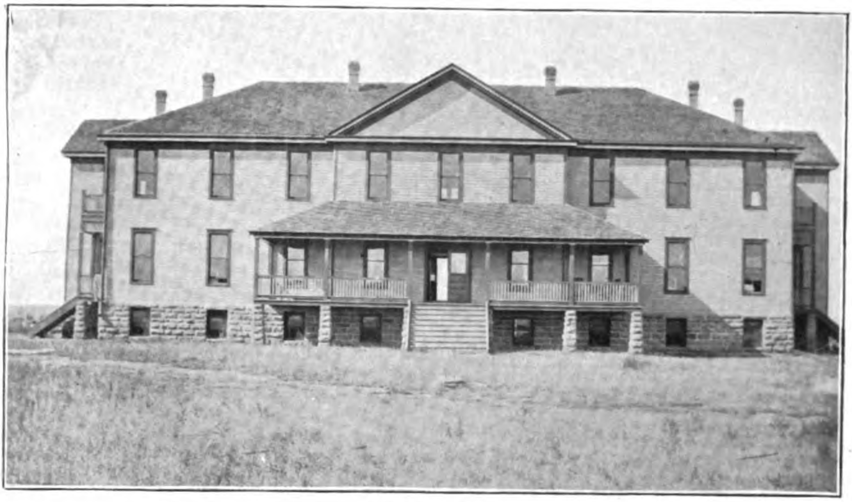
The school lands of Oklahoma are a heritage to coming generations, a legacy the magnitude of which it is hard to comprehend so early in the history of this promising young Commonwealth.

The school land department I consider the most important branch of the Territorial government, dealing as it does with interests so vital to the welfare of the public schools and other institutions of learning and of so great import to the future of the entire Territory, and it has been my earnest endeavor to secure an administration of the affairs of this department that shall stand for all time to come as a credit to my administration of the executive office of the Territory, and to which my friends can look with pride.

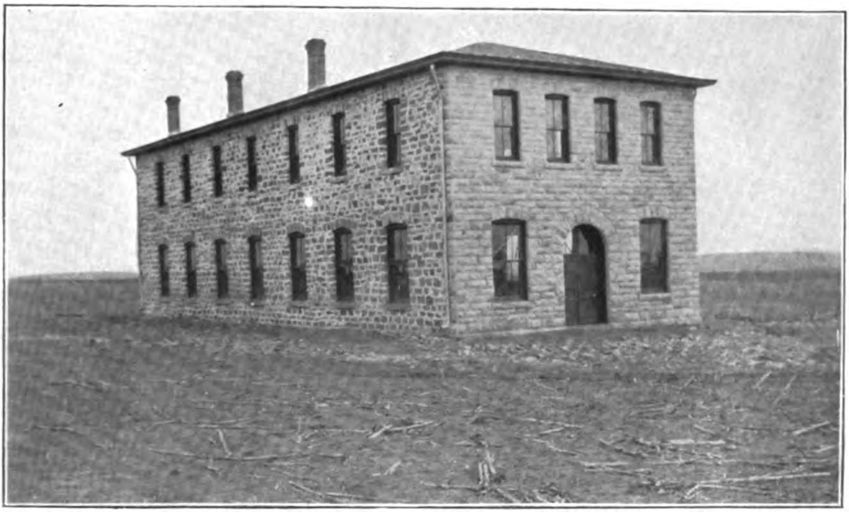
By the act of Congress approved March 4, 1889, opening Oklahoma to settlement, sections 16 and 36 in each township were reserved for the use and benefit of the common schools, and said reservation was confirmed by the organic act of the Territory.

It had been customary in all Territories in which school land was reserved to allow the land to lie idle until such time as the Territory was admitted to statehood, when some provision would be made for the disposal of the lands.

It was wholly through the foresight of Oklahoma's first governor, Hon. George W. Steele, that this great waste did not take place in Oklahoma. Early in his term of office he became impressed with the idea that some use should be made of the thousands of acres of school



DORMITORY.



MACHINE SHOPS.

BUILDINGS OF LANGSTON UNIVERSITY FOR COLORED YOUTH.

lands lying idle or being used by unauthorized persons or devastated of timber by vandals, and he conceived the plan of leasing the lands for a term of years. He soon after made a special trip to Washington and presented the matter to Congress. As a result of this visit, by act of Congress approved March 3, 1891, authority was given the governor of the Territory to lease said lands for the benefit of the school fund under such rules and regulations as might be prescribed by the Secretary of the Interior. Soon after the school land department was organized with one clerk appointed by the Secretary of the Interior, and the leasing of land begun. Up to this time the receipts of leasing of lands aggregates nearly $1,000,000, a sum that would have been wholly lost to the Territory had it not been for the business foresight of the Commonwealth's worthy first governor.

By the act of Congress approved March 3, 1893, the President was empowered to make reservations of land in the Cherokee Outlet for such public purposes as he might deem wise and desirable, and in accordance therewith, by Executive proclamation opening the Cherokee Outlet to settlement, the President reserved section 13 in each township for the benefit of higher educational institutions, and section 33 in each township for public buildings, which reservations were subsequently ratified by the act of Congress approved May 4, 1894.

By the act of Congress approved May 4, 1894, a board for leasing school lands was created, composed of the governor, secretary of the Territory, and superintendent of public instruction, who were authorized to lease the lands under the rules and regulations prescribed by the Secretary of the Interior until laws for the administration of the trust should be enacted by the legislature of the Territory.

By the act of Congress approved June 18, 1897, the lands in Greer County were opened to homestead entry, and sections 16 and 36 in each township were reserved for common-school purposes, and sections 13 and 33 in each township were reserved for "such purposes as the legislature of the future State of Oklahoma may prescribe."

The third legislative assembly failed to pass any law governing the leasing of school lands, but adopted a joint resolution authorizing the board as constituted by Congress to continue the leasing of lands, and permitted the board in the leasing of western lands to lease the same in such quantities as they might deem best for the public interests.

The fourth legislative assembly passed an act to regulate the leasing of school lands, which was vetoed by Governor Renfrow.

The fifth legislative assembly in its last hours passed an act to regulate the leasing of school lands. This act was comparatively an adequate measure when introduced, but in its passage through the two branches of the assembly was amended out of all resemblance to the original bill. Upon reading the perfected measure I felt at once it was a dangerous one and detrimental to the best interests both of the Territory and those who were leasing the school lands. Letters from the president of the Territorial School Land Lessees' Association and from the secretary of the Oklahoma Live Stock Association, whose members lease many thousands of acres of school lands, and from many private citizens and lessees confirmed me still further in this belief, and I determined it to be my duty to veto the bill.

The school land board as constituted by act of Congress composed of the governor, secretary of the Territory, and superintendent of public instruction, on May 3, 1899, adopted new rules and regulations governing the leasing of lands. These rules, which appear in full in my last annual report, have given general satisfaction to the school land lessees and the people of the Territory, and there has been no complaint worth speaking of during the past year. The interests of the schools and the Territory are well protected and the rights of the lessees fully recognized. They feel secure in their holdings, are paying their rentals promptly, and improving the lands in keeping with homestead lands about them.

INDEMNITY LANDS.

By authority of an act of the third legislative assembly, the school land board of the preceding administration made a contract with the Hon. D. A. Harvey, as Territorial agent, for the selection of indemnity lands, for losses from fractional sections, reservations, and other causes. Under this contract 101,188.68 acres were selected in the Kickapoo Reservation and 21,840 acres were selected in a body in Woodward County northeast of Camp Supply, for which services the agent received the sum of 10 cents per acre, the cost to the Territory being $12,302 fees to the agent, in addition to $1,568 fees to the registers and receivers of the land offices, which the Territory has been compelled to pay upon these lands during the past year under departmental decision of April 19, 1898 (26 L. D., 536).

The indemnity lands in the Kickapoo country were selected in lieu of lands in the Osage Reservation, and those in Woodward County were taken in exchange for lands in the Ponca and Otoe Reservation, to which the Territory waived its right.

During the present administration indemnity lands have been selected as follows:

	Acres.
Greer County, sections 13 and 33	21,416.56
Greer County, common school	20,713
Common school, Custer and Dewey counties	9,297.28
Total	51,426.84

The total expense in making these selections, preparing records, etc., in addition to the regular fees of the United States land office, has been $223.85.

There are still due the Territory about 12,000 acres of indemnity lands, which will be selected in the near future.

While the selection of indemnity lands in large bodies may be all right in the western part of the Territory, where the lands can be leased to one person for a cattle ranch, the selection of the lands in this way in the Kickapoo country, where, under the law, but a quarter section can be leased to a person, has proven a serious mistake. In this country, now a portion of Lincoln County, are two solid townships of school land, with five adjoining townships from one-third to three-fourths school land. These large bodies of contiguous nontaxable land work a great hardship upon the county and the people living upon the lands. It is impossible to raise money by taxation to build bridges, construct roads, or conduct district schools, for there are no lands to tax, and the lessees are all people in very moderate circumstances, with little or no personal property.

I recently investigated the condition of the people in this section, and feel that some means should be devised for affording them relief from the unusual and un-American conditions which prevail, and which are clearly shown by the presentation of the situation as found in the following school districts:

In school district 123 there is a taxable valuation of $5,000 of property, but $700 of which is real estate. They levy 2 per cent tax for schools, and then can have but two months' school. The total tax rate is 5¾ per cent, and no roads or adequate school privileges are afforded.

In district 133 the valuation is $4,900—all personal property. The tax rate for schools is 2 per cent, with but three months' school, unless the term is extended by subscription. The schoolhouse was built of logs by the men of the district, who also made the desks, and the stove and other necessities were purchased by the women giving socials.

In district 130 the schoolhouse was built by subscription, the school term lengthened from three to four months by subscription. There is $8,670 of personal property for taxation. Roads are only improved by poll tax, and no money can be had to purchase lumber or nails for bridges.

WORK OF THE DEPARTMENT.

The revenue from the leasing of sections 16 and 36 throughout the Territory are distributed semi-annually directly to the various school districts of the Territory in proportion to their school population. This distribution the past year amounted to $1.13 per capita, $129,652.81 being distributed among 114,737 school children.

Funds arising from rentals of sections 13 have been distributed to the use and benefit of the university, normal schools, agricultural and mechanical college, and the agricultural and mechanical university, one-fifth to each institution.

The funds arising from the leasing of sections 33 are turned into the Territorial Treasury to be held until such time as the legislature shall appropriate them for the erection of public buildings. This fund now amounts to $98,072.18, having increased $22,110.18 the past year.

The business of the school-land department is fast assuming large proportions, embracing as it does the transaction of business with over 5,000 lessees in the collection of rental, appraisal, and transfer of lands, making new leases, protection of lands from squatters and vandals, etc. The handling of the large sums of money, the executing and recording of thousands of leases, the custody of almost innumerable notes, and the keeping up of a correspondence often reaching several hundred letters a day requires great executive ability and thorough business management, both of which are constantly displayed in the conduct of this department.

A system of bookkeeping has been adopted by which an accurate knowledge of the condition of affairs of the land office may be told at a glance, and trial balances are made from time to time which are as reliable as a national-bank statement.

The department, through its special agent, has investigated every quarter of vacant land in the Territory outside of Greer County, and over $5,000 has been collected from persons using lands without leasing them, and leases have been made for all such lands, adding this sum annually to the school fund.

In 1897, when the present administration took charge of the school-land department, there were 4,159 sections of school land vacant, and though Greer County has been added, with 830 quarter sections, since then, there are but 163 quarter sections vacant in the entire Territory at this time.

The rental notes due in 1897 amounted to $108,113.35; in 1900, $198,873.28, an increase of $90,759.93. The total receipts of the department since its organization has been $910,286.03, and it will pass the million-dollar mark by October 1, while there are now on hand rental notes amounting to over half a million dollars more, all due within the next two years.

I transmit herewith a number of tables showing the operations of the department from its organization to the present time, with the very satisfactory results obtained.

Receipts and expenditures for the year ending June 30, 1900.

On hand June 30, 1899	$2,642.09
Received from June 30, 1899, to June 30, 1900	189,486.44
Total	192,128.53
Expenses for the year	12,003.72
To treasurer	176,432.29
Returned to applicants	292.48
Balance on hand	3,400.04
Total	192,128.53

Receipts and expenditures of each fund for the year ending June 30, 1900.

COMMON SCHOOL.

Cash received		$138,895.20
Expenses	$8,823.72	
Returned to applicants	292.48	
Net proceeds	129,779.00	
		138,895.20

COLLEGE.

Cash received		24,084.79
Expenses	$1,616.41	
Net proceeds	22,468.38	
		24,084.79

PUBLIC BUILDINGS.

Cash received		23,573.27
Expenses	$1,463.09	
Net proceeds	22,110.18	
		23,573.27

GREER COUNTY.

Section 13:		
Cash received		1,512.05
Expenses	$50.25	
Net proceeds	1,461.80	
		1,512.05
Section 33:		
Cash received		1,421.13
Expenses	$50.25	
Net proceeds	1,370.88	
		1,421.13

Lincoln County Corn.

Net proceeds from leasing lands.

Fiscal year ending June 30—	
1891	$4,536.82
1892	21,346.13
1893	19,164.67
1894	45,989.98
1895	88,627.97
1896	71,740.68
1897	98,467.81
1898	173,442.83
1899	133,047.19
1900	177,190.24
Total	833,554.32

Total receipts and expenditures of each fund to June 30, 1900.

COMMON SCHOOL.

Cash received		$690,475.86
Expenses	$51,360.45	
Money returned to applicants	5,379.00	
Net receipts	633,736.41	
		690,475.86

COLLEGES.

Cash received		106,445.88
Expenses	$8,329.95	
Money returned to applicants	1,388.41	
Net receipts	96,727.52	
		106,445.88

PUBLIC BUILDINGS.

Cash receipts		107,569.86
Expenses	$8,321.59	
Money returned to applicants	1,176.09	
Net receipts	98,072.18	
		107,569.86

GREER COUNTY.

Section 13:		
Cash received		3,065.95
Expenses	$388.11	
Net receipts	2,677.84	
		3,065.95
Section 33:		
Cash receipts		2,728.48
Expenses	$388.11	
Net receipts	2,340.37	
		2,728.48

GRAND TOTALS OF ALL FUNDS.

Cash receipts		910,286.03
Expenses	$68,788.21	
Money returned to applicants	7,943.50	
Net receipts	833,554.32	
		910,286.03

Apportionment of school fund in 1900.

[$1.13 per capita of school population.]

County.	January.	July.	Total.
Beaver	$949.00	$123.37	$1,072.37
Blaine	2,793.00	363.09	3,156.09
Canadian	4,742.00	616.46	5,358.46
Cleveland	6,057.00	787.41	6,844.41
Custer	3,185.00	414.05	3,599.05
Day	399.00	51.87	450.87
Dewey	2,242.00	291.46	2,533.46
Garfield	6,132.00	797.16	6,929.16
Grant	5,146.00	668.98	5,814.98
Greer	4,921.00	639.73	5,560.73
Kay	6,260.00	813.80	7,073.80
Kingfisher	5,910.00	768.30	6,678.30
Lincoln	8,653.00	1,124.89	9,777.89
Logan	7,604.00	988.52	8,592.52
Noble	3,307.00	429.91	3,736.91
Oklahoma	7,352.00	955.76	8,307.76
Pawnee	4,487.00	583.31	5,070.31
Payne	6,751.00	877.63	7,628.63
Pottawatomie	10,152.00	1,319.76	11,471.76
Roger Mills	1,418.00	184.34	1,602.34
Washita	4,606.00	598.78	5,204.78
Woods	9,645.00	1,253.85	10,898.85
Woodward	2,026.00	263.38	2,289.38
Total	114,737.00	14,915.81	129,652.81

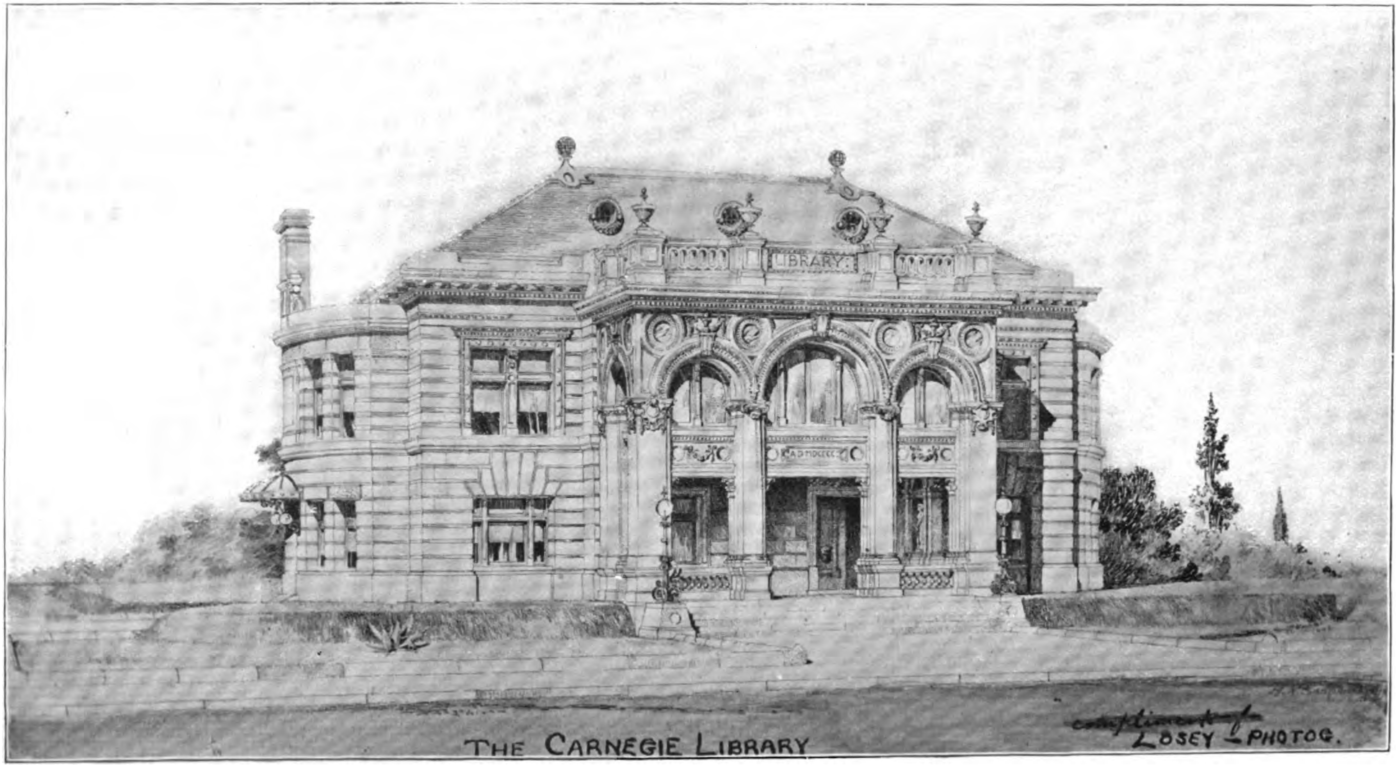
The January apportionment was $1 per capita, and the amount distributed at that time represents the school population in each county.

Amount of distribution per capita each year.

Year ending June 30—	Number of children.	Amount.
1892	31,920	$0.83
1893	43,939	.56
1894	74,384	.72
1895	77,770	.69
1896	88,093	.62
1897	88,745	.86
1898	90,585	1.34
1899	101,474	.97
1900	114,737	1.13

Notes on hand.

	Number.	Amount.
Common-school fund	9,768	$416,122.60
College	1,212	48,898.57
Public building	1,251	52,026.70
Greer County:		
Section 13	85	2,976.26
Section 33	84	3,474.10
Total	12,400	523,498.23



In Course of Erection at Oklahoma City.

Vacant school lands in 1897 and 1900.

County.	Quarter sections vacant.		County.	Quarter sections vacant.	
	1897.	1900.		1897.	1900.
Kickapoo Reservation	....	2	Logan	18	....
Pawnee	61	2	Canadian	22	2
Payne	31	1	Blaine	148	22
Noble	36	....	Kingfisher	49	7
Kay	24	....	Dewey	204	4
Garfield	128	....	Custer	207	....
Grant	172	....	Washita	178	....
Woods	763	18	Roger Mills	224	....
Woodward	197	27	Day	169	8
Lincoln	181	1	Beaver	1,189	30
Pottawatomie	13	5	Greer[1]	....	19
Cleveland	21	....			
Oklahoma	104	1	Total	4,139	163

[1] Greer County, containing 830 quarter sections, has been added to the Territory since 1897.

SOME NEEDED LEGISLATION.

The act of Congress providing for the opening of Greer County to homestead settlement reserves sections 13 and 33 for such purpose as the legislature of the future State of Oklahoma shall prescribe. In the Cherokee Strip and in the Kiowa and Comanche Reservation section 13 is reserved for colleges and 33 for public buildings of the Territory, and it seems to me that it would be wise for Congress to change the Greer County reservations so as to coincide with those of other portions of the Territory and do away with the keeping of special funds for Greer County as well as the piling up of the rentals of these sections for possibly some use foreign to the intention of Congress.

In the act of June 6, 1900, providing for the opening of the Kiowa and Comanche Reservation to settlement, the mineral laws of the United States are made applicable to the school, college, and public-building lands. It is to be hoped that Congress will so amend this act as to exempt these lands from the operation of the mining laws, as the school lands in the mountainous section of the reservation will be of little value except for the minerals on them, and they will not be available to the Territory if any person can take them for mining claims.

In view of the fact that sections 13 and 33 were not reserved for the Territory in old Oklahoma, or in the Cheyenne and Arapahoe, Iowa, Sac and Fox, and Pottawatomi reservations, and there are now large bodies of Government land still unoccupied in western Oklahoma, I believe that it would be but just to the Territory for Congress to enact legislation granting this surplus land to the Territory in lieu of the reservations thus omitted.

SOCIAL AND RELIGIOUS CONDITIONS.

But a few years since Oklahoma was generally regarded as the home of the savage and the outlaw, where the hot winds blew and drouth reigned supreme. All this is changed to-day, for all the world has come to realize that Oklahoma is the most prosperous commonwealth in this great Union, and that her people are intelligent, progressive, and enlightened.

The Territory, as a rule, has been peopled with the more active, progressive, and energetic element of the various States of the Union, and they have commingled together, forming a social life as pleasant, enjoyable, and profitable as that of any section of the Union.

In no new country have the various religious organizations of the country been so active, and the cities and towns of the Territory to-day support more churches than the majority of communities five and ten times as old.

All kinds of social functions prevail in the various localities. Every town of any size has an opera house, where excellent theatrical and opera troupes perform. Lecture courses, concerts, and other entertainments are liberally patronized. The church social is found here, as elsewhere, and there are numerous public and private receptions, balls, and banquets, where the dress of the participants, the oratory, and the social intercourse is fully up to the standard of the most advanced Eastern city.

All fraternal organizations and social orders have large membership, and women's clubs are found in most of the towns of the Territory. These clubs, through the Territorial and local federations, are doing much to advance the higher interests of the Territory, helping in the improvement of the public schools, inaugurating public libraries in many of the towns, and fostering a spirit for the improvement and beautifying of city homes, streets, and parks.

I give below the statistics of the various religious and fraternal organizations in the Territory, as far as I have been able to obtain them.

Methodist Episcopal Church.

Church buildings	110
Value of church buildings	$98,950
Parsonages	45
Value of parsonages	$20,305
Members	8,120
Number of pastoral charges	99
Number of Sunday schools	126
Number of Sunday school scholars	7,432

Protestant Episcopal Church.

Organized missions	13
Other regular stations	16
Church buildings	13
Parsonages	8
Clergy	9
Communicants	469
Value of church property	$22,400
Children in Sunday schools	201
Total contributions	$4,000

Congregational Church.

Number of organizations	76
Membership	2,580
Church buildings	63
Value of church property	$60,000
Preachers	52
Colored churches	2
Young People's societies Christian Endeavor	22
Membership Young People's societies Christian Endeavor	644
Sunday schools	61
Membership	4,427
Money received from church building society	$43,500
Expended by Home Missionary Society	$105,000

Baptist Church.

Churches:	
White	225
Colored	95
Membership:	
White	7,396
Colored	4,100
Ministers:	
White	145
Colored	100
Membership Sunday schools	8,000

Friends.

Total white membership	1,400
Indian members	164
Indian missions	5
Indian schools	2

Roman Catholic Church.

Bishop	1
Priests	21
Churches	44
Chapels	6
Stations visited	108
Membership	13,804
New residences for priests	4
Academies	3
College for boys	2
Schools for boys and girls	8
Schools for colored	2
Convents	12
Monastery	1
Hospital	1
Value of school and church property	$115,000

Presbyterian Church.

Church organizations	47
Church membership	2,000
Church buildings	33
Value of church property	$57,000
Colored churches	2
Young Peoples' Society Christian Endeavor	20
Sunday schools	45
Sunday-school missionaries	3

United Brethren Church.

Church organizations	80
Church membership	1,708

Methodist Episcopal Church, South.

Charges	44
Societies and churches	137
Presiding elders	4
Pastors	44
Local preachers	52
Church members	6,340
Additions during eighteen months	1,209
Church buildings (value $43,150)	31
Parsonages (value $13,430)	28
Epworth Leagues	26
Membership	797
Sunday schools	56
Officers and teachers	377
Scholars	2,726

Christian Church.

Number of organizations	107
Membership	7,500
Church buildings	50
Value of buildings	$55,000
Preachers	100
Colored preachers	4
Colored churches	4
Young peoples' societies Christian Endeavor	32
Sunday schools	48
C. W. B. M. organizations	16

Colored churches.

	Membership.
Missionary Baptist	8,034
African M. E. Church	2,686
Colored M. E. Church	586
M. E. Church (colored wing)	696
Primitive Baptist	409
Colored Presbyterians	106
Congregational	390

Young People's Societies of Christian Endeavor.

Young people's societies	130
Members	6,550
Junior societies	26
Members	750
Total societies	156
Total membership	7,300
New societies	35
Associate members uniting with the church during the year	300
Money given by the societies for missions and church expenses	$2,450

Sunday schools.

Number of schools	1,000
Officers and teachers	6,000
Scholars	50,000
Per cent of population attending Sunday schools	14
Per cent of children attending Sunday schools	30

Fraternal organizations.

Name.	Organizations.	New organizations.	Members.	New members.	Value of property.
Masons	48	4	2,167	275	
Odd Fellows	106	22	4,700	1,000	$50,000
A. O. U. W	52	12	2,605	1,094	
K. of P.	34	6	1,629	344	12,500
W. of W	79	31	2,509	1,346	
G. A. R.	77	10	1,208	200	2,500
Confederate Veterans	25	3	1,000		
Maccabees	3	1	150	25	
Eastern Star	68	6	1,634	150	8,230
Order of Elks	2		126		1,100
Sons of Herman	8		187		500
W. C. T. U	54	20	1,000		
Women's Federated Clubs	32	9	700	25	a 1,500
Women's Relief Corps	33	4	672	135	786

a Books.

Colored organizations.

	Membership.
A. F. and A. Masons	502
G. N. O. of Odd Fellows	206

ERECTED BY OKLAHOMA CONSISTORY ANCIENT AND ACCEPTED SCOTTISH RITE.

DEAF-MUTES.

These unfortunates are cared for by contract in the deaf-mute institute located at Guthrie.

The school department is in immediate charge of a very efficient teacher, who has had twenty-six years' experience in the work. She has organized and has personal charge of an oral class, who have made wonderful progress.

Another competent teacher of five years' experience, has charge of the intermediate department.

A graduate of the Kansas School for the Deaf has charge of the primary department. All of these have proven hard workers. The pupils have taken more interest and made greater progress than at any previous term. The health of the pupils has been remarkable, owing to the good sanitary arrangements of the institution and the careful and watchful attention of the resident physician.

The number of pupils in attendance the last term was 52; 3 of this number withdrew, leaving 49. They are from the following counties, viz:

Logan	11	Pottawatomie	8
Noble	2	Pawnee	2
Payne	7	Lincoln	2
Canadian	5	Woods	7
Oklahoma	2	Washita	1
Kingfisher	3		
Roger Mills	1	Total	52
Kay	1		

From the different reports and statistics gathered, I deem there are about 72 deaf-mutes of school age in the Territory.

It is a pleasure for me to state that with the corps of excellent teachers and employees in the institution, and their work ably supplemented by the matron and superintendent, the work and progress accomplished during the last term have been a surprise even to the parents and guardians themselves.

The pupils accomplished a vast amount of work, and are preparing themselves for profitable employment in afterlife.

THE BLIND.

The fourth legislative assembly authorized the making of a contract for the care and education of the blind of the Territory and the levying of a special tax to carry out the same.

I have made two contracts for the same, but both have been relinquished because the small number of blind in the Territory would not justify the expenditure necessary to establish a proper institution.

There are about 50 blind persons in the Territory, but not over one-third of them are of school age. I have several times been appealed to by blind persons who desire assistance to attend some institution where they can learn some trade and become self-supporting, and feel that there should be some action taken to educate and assist all these unfortunates so that they will not be burdens upon society.

The number of blind reported from the various counties is as follows:

Blaine	4
Cleveland	2
Custer	1
Dewey	1
Garfield	4
Grant	3
Greer	5
Lincoln	2
Logan	2
Noble	1
Oklahoma	7
Pawnee	1
Payne	3
Pottawatomie	1
Roger Mills	4
Washita	2
Woods	6
Total	49

INSANE.

Oklahoma Territory does not own an insane asylum, the insane of the Territory being cared for by contract. They were first sent to Jacksonville, Ill., and later the Oklahoma Sanitarium Company secured the contract and erected an asylum at Norman. They were at first paid $300 per annum for each patient, but two years ago I made a new contract at $200 per patient, which has been a saving of many thousands of dollars to the Territory.

The asylum has permanent and commodious quarters, which are being constantly added to, and the buildings are so well arranged, the grounds so attractive, and the management of the institution so satisfactory that a large number of private patients are sent there from Western and Southern States.

The asylum is well conducted in every way, the sanitary conditions are of the very best, and the care and comfort of the patients well looked after.

In transmitting me his annual statistical report the superintendent of the asylum, Dr. John Threadgill, has the following to say:

> This being the only charitable institution of the Territory, all classes of invalids are sent here; many who come do not live more than a few days after being received. A number of patients are brought here on stretchers. If the management had the right to say who should be received in the asylum and who should not be received, the death rate would be comparatively light. Many of our deaths are among very old people, who are sent here for want of a better home. We now have people here who are past 80 years of age, who are a charge on the Territory. The asylum has at all times been clear of fevers, pneumonia, and all other diseases that would originate from an unsanitary condition. During the past winter smallpox was brought into the asylum, and out of about 200 cases there was not a single death from the disease.,

The asylum is subject at all times to inspection by the Territorial superintendent of public health and a committee of three physicians, appointed by the governor, who visit the institution four times a year, examine the patients, and order the discharge of all they deem in proper condition.

For the year ending June 30, 1900, the sanitarium company reports the following improvements:

> New frame cottage (capacity, 40 patients) completed and furnished for a negro male ward.
>
> Frame addition (capacity, 20 patients) to hospital ward, completed.
>
> Frame addition (capacity, 25 patients) to white male cottage, completed.
>
> Frame cottage to be completed by October 1 for use as a negro female ward (capacity, 40 patients).
>
> Repairing has been done wherever needed and all improvements possible with paint, whitewash, and paper to put the entire place in thorough sanitary condition.
>
> The sewerage appliances, pipes, and cesspools are in the best possible condition, and are entirely adequate.

Comfortable seats have been placed in the park, the trees of which afford ample shade.

Drinking water for the entire institution is furnished winter and summer by two fine wells on the asylum grounds. Water for all other purposes is supplied by the city of Norman.

The number of patients on hand July 1, 1899, was 243; number of patients received from July 1, 1899, to July 1, 1900, 184; number of patients discharged as cured, 94; number of patients escaped, 6; number of patients died, 44; number of patients on hand July 1, 1900, 283, showing a gain during the year of 40 patients. This applies only to the patients who are in charge of the Territory, and does not include private patients.

The following table gives the statistics of the institution in detail by counties:

County.	On hand July 1, 1899.	Received during year.	Deaths.	Releases.	Escapes.	On hand July 1, 1900.
Beaver	3		1			2
Blaine	1	1				2
Canadian	14	13	3	3	1	20
Cleveland	22	13	2	13	1	19
Custer	4	5		2		7
Dewey	3	1	1	1	1	1
Garfield	14	5	2	6		11
Grant	4	8	4	1		7
Greer	4	5		2		7
Kay	14	14		6		22
Kingfisher	16	4	2	3		15
Lincoln	13	12	5	4	1	15
Logan	21	19	6	7		27
Noble	8	7	1	5		9
Oklahoma	32	19	5	14	1	31
Pawnee	5	12		5		12
Payne	18	6	2	2	1	19
Pottawatomie	20	18	4	5		29
Roger Mills	2	4	1	4		1
Washita	8	6		4		10
Woods	13	5	2	5		11
Woodward	4	7	3	2		6
Total	243	184	44	94	6	283

The expense of caring for and transporting insane for the year has been as follows:

Care	$62,898.36
Transportation	4,536.67
Total	67,435.03

This is an increase of $19,559.69 over the preceding year.

PUBLIC LANDS.

There are still 5,733,385 acres of vacant Government land in the Territory subject to homestead entry. While much of this land is broken and rough and most of it unfit for farming, there are still many quarter sections to be found upon which the homeseeker from the crowded sections of the North or East can find a comfortable home and attain a competence in time by proper management.

About all of this land is suitable for grazing, and offers an inviting field for the stock raiser.

Nearly half the vacant land in the Territory is in Beaver County, which as a whole is strictly a cattle country, although there are very fine and productive farms in the river valleys or in irrigated districts. In a cattle country the 160 acres to which a homestead settler is limited is not enough, and I believe it would be to the best interests of the people of that county and the Territory at large to restore to that section the rights of preemption and timber culture, which were taken from the settlers there when that country was made a part of Oklahoma Territory. Limited to 160 acres of land, the poor settler can not compete with the large cattlemen, who predominate the country, but if he could obtain possession of more land under these acts he could launch out in the stock business in a manner most profitable.

By courtesy of the registers and receivers of the several United States land offices in the Territory, I am able to give the status of the lands in each district.

Oklahoma City district.—There are 83,440 acres of vacant land in this district, lying wholly in Roger Mills, Custer, and Washita counties. A small part of this land is adapted to farming, but most of it is fit for grazing alone, while some is so rocky and broken as to be of little use except for the deposits of stone and gypsum found thereon.

County I, which is embraced in this district, comprises the entire Wichita Reservation, which is not yet open to settlement.

Oklahoma City district statistics.

County.	Vacant.	Reserved.	Filed on.	Area in district.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Blaine		55,000	10,000	65,000
Canadian		181,420	290,580	382,000
Cleveland		80,000	268,000	348,000
Custer	6,500	80,000	239,500	326,000
I		646,000		646,000
Lincoln		118,000	111,000	229,000
Oklahoma		32,000	316,000	348,000
Pottawatomie		273,900	227,100	501,000
Roger Mills	75,000	40,000	507,000	622,000
Washita	1,940	109,000	517,060	628,000
Total	83,440	1,615,820	2,396,240	4,095,000

Total number of homestead entries filed in district, 17,723.

Guthrie land district.

County.	Appropriated.	Reserved.	Total area.
	Acres.	*Acres.*	*Acres.*
Lincoln	333,266	56,102	390,000
Logan	343,106	16,894	360,000
Oklahoma	88,160	3,840	92,000
Payne	265,006	55,994	321,000
Total	1,029,538	133,430	1,163,000

No vacant lands in district.

Number of homestead entries to June 30, 1900 13,436
Number of homestead entries for the year ending June 30, 1900 129

Kingfisher land district.

County.	Vacant land.	Reserved.	Homesteads.	Total area.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Blaine	3,788	237,040	287,172	528,000
Canadian	405	39,360	99,235	139,000
Custer	13,834	55,964	251,186	321,000
Dewey	79,792	108,320	448,888	637,000
Day	488,689	38,400	138,911	666,000
Kingfisher	1,125	74,240	492,630	568,000
Logan	....	6,400	105,600	112,000
Oklahoma	....	1,280	21,720	23,000
Roger Mills	77,526	12,160	45,314	135,000
Total	665,159	573,180	1,890,661	3,129,000

Total number of homestead entries made during fiscal year ending June 30, 1900	1,557
Total number of final certificates issued	303
Total number of entries made from organization of land district to June 30, 1900	18,395
Total number of acres of vacant land taken up during fiscal year ending June 30, 1900	167,961

Next to the Woodward district, this district has the greatest area of vacant land. As in the other districts, the most desirable land has all been selected, but there are still many comfortable homes to be found where a man can take a comfortable living from the soil and lay by a bit for a rainy day.

Perry land district.

County.	Area unappropriated and unreserved.	Area reserved.	Area appropriated.	Total area of land surface of the county.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Kay	....	46,579	425,421	472,000
Noble	....	30,345	468,655	499,000
Pawnee	244	30,949	301,807	333,000
Payne	....	10,842	152,158	163,000
Total	244	118,715	1,348,041	1,467,000

Enid district.

County.	Area unappropriated and unreserved.	Area reserved.	Area appropriated.	Total area of land surface.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Garfield	....	74,462	565,538	640,000
Grant	1,120	75,335	595,545	672,000
Total	1,120	149,797	1,161,083	1,312,000

Garfield County has no vacant public lands. The vacant land in Grant County is sandy and broken.

Number of homestead entries made from September 16, 1893, to June 30, 1900	11,004
Number of homestead entries made from July 1, 1899, to June 30, 1900 (all on relinquishments or preference right in contest cases)	252

Mangum district.

County.	Area.	Filed upon.	Reserved.	Subject to entry.	Number of entries since organization of district.	Entries during fiscal year 1900.
	Acres.	*Acres.*	*Acres.*	*Acres.*		
Greer	1,511,575	962,820	143,135	405,620	6,412	1,420

This district embraces the whole of Greer County, and is one of the most prosperous sections of the Territory. Wheat, corn, cotton, and cattle are all money makers here, and the people are prosperous and contented. While portions of this county have been settled for many years, it is only since the county became a portion of Oklahoma, in 1896, that there has been any large immigration.

Many thousands of settlers have poured into the county the past two years, and proven beyond a doubt that it is a successful farming community. The greater portion of the lands still vacant are best adapted to stock raising, but there are still many fine claims to be located where farming will pay. The Rock Island Railway has just built into the county, which gives better markets and enhances the value of the lands.

Alva district.—This district includes Woods County alone.

Total acreage	1,732,000
Acres appropriated	1,596,435
Acres vacant	135,565

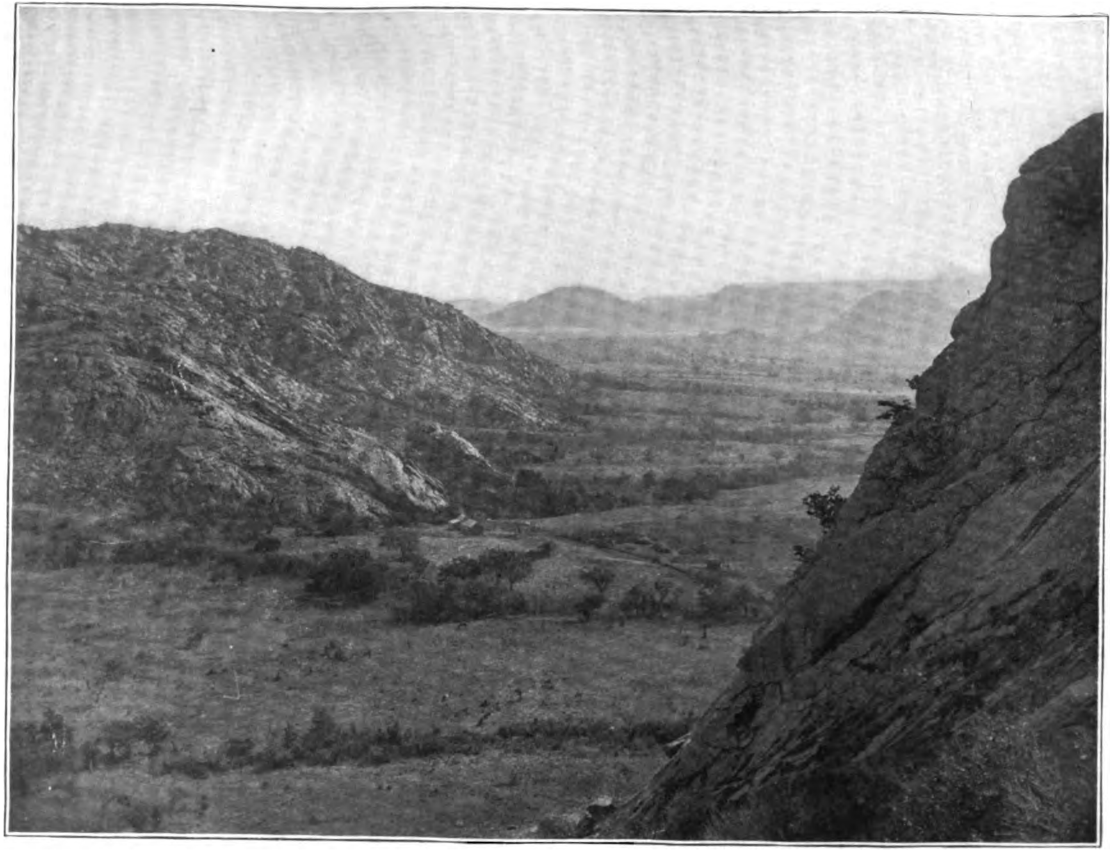
No reserved lands in this district.

Total number entries	11,624
Entries July 1, 1899, June 30, 1900, inclusive	1,330

The vacant lands in Woods County are mostly broken and rocky and not adapted to general farming. All of the desirable lands in the Saline Reservation have been taken.

Woodward district.—In transmitting me the statistical information of their district, Messrs. Miller and Healey, register and receiver of the land office, have the following to say in regard to the country embraced in the district:

> In response to your recent inquiry concerning the resources and development of this part of the Territory during the past year, it affords us great pleasure to state, in connection with the above statistics, that the records show an increase in the volume of business done at this office of more than $10,000 in excess of 1899, and more than $21,000 in excess of 1898.
>
> The extraordinary resources of this district are becoming more generally known, and an influx of industrious and intelligent home seekers, who have found rents too high in Iowa, Kansas, Nebraska, and Missouri, are flocking to its fertile plains and alluvial valleys. For the past year the average number of original homestead entries allowed at this office is 121 per month, while for the last half year the average has been 187 per month, reaching in March 209. In addition to those allowed, hundreds of applications have been filed asking for second homestead entry by settlers, who, with their families, have located upon the tracts selected and applied for. Conservative estimates place the increase of population of our district for the past year at 60 per cent.
>
> An altitude of from 2,000 to 3,000 feet in Woodward County, and from 2,500 to 4,000 in Beaver County renders the climate of this section most healthful and agreeable, while the diversified character of the soil and surface afford opportunity for successful pursuit in cattle raising, farming, dairying, and fruit raising. Already some of the pioneer settlers have extensive orchards and vineyards burdened with luscious



SCENE IN THE WICHITA MOUNTAINS.

fruit, their gardens teeming with rich, sweet vegetables, while the aroma of ripening grain and melons is in evidence everywhere. The present crop conditions are excellent, with such an abundance as to insure a general prosperity.

The chief industry, however, of this section is cattle raising. The excellent grass land of considerable portions of Woodward and Beaver counties is watered by a thousand streams tributary to three splendid rivers, and by a myriad of springs which furnish water the year round. The streams are skirted with timber which affords shade in summer and a retreat from the storms of winter. Within the entire history of the district, there has never been a year so unseasonable that a sufficient supply of forage and grain could not be easily grown to feed all the cattle and keep them in excellent condition during the entire year. Many who have come here and engaged in this line of industry have climbed from penury to a competency that has placed them beyond the possibility of want.

Our schools and social conditions are rapidly developing to a state not surpassed by those of older communities, and at our present rate of progress it can only be a very few years at most when all the advantages of wealth and education enjoyed by the older communities will be shared by all who cast their fortunes with us.

Woodward district statistics.

County.	Area entered.	Area reserved.	Area now vacant.	Area school land.
	Acres.	*Acres.*	*Acres.*	*Acres.*
Beaver	258,869	....	3,211,931	211,200
Woodward	604,049	40,320	1,231,431	248,200
Total	862,918	40,320	4,443,362	459,400

Total number of entries made	5,309
Entries made during the year ended June 30, 1900	1,458

Kiowa and Comanche lands.—The 2,968,893 acres embraced within the Kiowa and Comanche Reservation will likely become a part of the public domain within the year just opening, and then will occur another one of the grand rushes for land and homes for which Oklahoma has become noted.

These lands are fully described elsewhere under the head of Indian reservations.

SETTLEMENT OF LANDS.

As long ago as 1897 the impression had gone forth that all of the Government land in the Territory suitable for agricultural purposes had been taken up, but the bountiful crops since then have induced many people each year to settle land that at first had been rejected.

During the two years ending June 30, 1899, over 10,000 quarter sections were thus taken, and so agreeable has been the experience of all these settlers that others have been coming and are still coming and taking up lands that had been overlooked or rejected by those who preceded them. During the year just ended 603,527 acres were filed upon by new settlers, representing nearly 4,000 families of new settlers outside of those who purchased farms or located in towns or cities. There are still 5,733,385 acres of vacant Government land in the Territory subject to homestead entry. Most of this is too high or rough to be suited for agriculture, but there are still some excellent farms upon which one can combine stock raising with some little farming and do exceedingly well.

The number of acres of land filed upon during the year and the number of acres vacant and subject to homestead entry is shown by the following table:

County.	Filed on.	Still avcant.
	Acres.	*Acres.*
Beaver	21,080	3,211,931
Blaine	10,452	3,788
Canadian	355	405
Custer	23,886	20,334
Day	41,831	488,689
Dewey	83,778	79,792
Grant	....	1,120
Greer	112,670	405,620
Pawnee	1,179	244
Roger Mills	29,594	152,526
Washita	560	1,940
Woods	88,463	135,565
Woodward	188,679	1,231,431
Total	603,527	5,733,385

BANKS AND BANKING.

There are 79 Territorial or State banks and 11 national banks in operation in Oklahoma.

The condition of our banking institutions tells the story of the prosperity of the Territory. These banks are almost without exception in a sound and flourishing condition, with a reserve several times larger than that required by law, and greater than the reserve held by the banks of any other part of the nation.

A new and rapidly developing country offers unusual opportunities for the doing of a safe and profitable banking business, and the people of the Territory generally are to be congratulated upon the excellent banking facilities offered them.

The Territorial banks are all organized and conducted under a comprehensive and conservative Territorial banking law, subject at all times to examination by the bank commissioner, and required to make quarterly reports, all of which inspires the confidence of the general public.

Oklahoma has not had a bank failure of any kind for three years. Eleven new Territorial and four new national banks have opened during the year.

I give below a comparative statement of the condition of the Territorial banks, on June 30, for three years past:

Comparative statement State banks of Oklahoma.

	1897.	1898.	1899.	1900.
RESOURCES.				
Loans and discounts	$1,126,795.37	$1,420,202.99	$1,646,332.43	$2,409,362.85
Warrants and bonds	100,573.68	78,388.74	87,975.02	....
Overdrafts	70,514.05	55,786.09	94,576.68	98,142.50
Real estate, furniture, and fixtures	202,398.80	159,784.96	271,710.20	299,426.13
Cash and sight exchange	743,756.09	1,561,262.37	1,830,128.12	2,340,250.03
Total	2,244,037.99	3,275,425.15	3,930,720.45	5,147,181.51
LIABILITIES.				
Capital	613,328.70	509,786.69	604,600.00	744,588.66
Surplus and profits	115,621.36	205,153.28	286,952.67	483,970.73
Deposits	1,499,149.69	2,560,485.18	3,022,373.01	3,918,622.12
Bills payable and rediscounts	15,938.24	....	16,794.77	....
Total	2,244,037.99	3,275,425.15	3,930,720.45	5,147,181.51
THE GAINS MADE.				
Reserve ... per cent	49	60	65	60
Gain in deposits	....	$1,061,335.49	$461,887.87	$896,249.11
Gain in cash	....	817,506.33	268,865.75	510,121.91
Gain in loans and discounts	....	293,407.62	226,129.44	763,090.42

Total gain in deposits in three years	$2,419,472.43
Gain in deposits in three years ... per cent	162
Total gain in cash in three years	$1,596,493.94
Gain in cash in three years ... per cent	215

The following abstract of the condition of the 11 national banks of the Territory at the date of their last statement shows them to be in a prosperous and healthy condition, a gain of $824,683.53, or 68 per cent, in deposits having been made during the past year:

Condition of National banks of Oklahoma, April 26, 1900.

RESOURCES.

Loans and discounts	$1,336,965.34
Overdrafts	44,843.72
United States bonds to secure circulation	200,800.00
United States bonds to secure deposits	100,000.00
United States bonds on hand	62,500.00
Premium on United States bonds	42,201.06
Stocks, securities, judgments, claims, etc	146,560.82
Banking-house furniture and fixtures	90,646.33
Due from other national banks	207,141.40
Due from State and private banks and bankers	32,846.96
Due from approved reserve agents	556,453.51
Internal-revenue stamps	4,028.41
Checks and other cash items	42,007.99
Exchanges for clearing house	128.34
Notes of other national banks	51,460.00
Fractional paper currency, nickels, and cents	1,966.34
Specie	100,941.75
Legal-tender notes	69,038.00
Five per cent redemption fund	7,347.50
Due from United States Treasurer	500.00
Aggregate	3,098,377.47

Comparative statement State banks of Oklahoma—Continued.

LIABILITIES.

Capital stock paid in	$525,000.00
Surplus fund	40,800.00
Undivided profits, less expenses	82,837.08
National bank notes outstanding	150,250.00
Due to other national banks	48,774.55
Due to State and private banks and bankers	131,059.82
Due to approved reserve agents	1,935.79
Dividends unpaid	180.00
Individual deposits	2,042,295.15
United States deposits	38,433.54
Deposits of United States disbursing officers	36,468.59
Other liabilities	342.95
	3,098,377.47

BUILDING AND LOAN ASSOCIATIONS.

Six building and loan associations have been chartered under the laws of the Territory, four of which are at present in active operation.

These associations encourage habits of saving in the people and help greatly to build up the towns where they are operated. They help people to own their own homes, which is always a good thing, for, as a general proposition, the man who owns a home is a better citizen than the one who does not.

The stock and mortgages of these local associations are exempted from taxation, all associations are compelled to make sworn statements semiannually to the secretary of the Territory, and the business hedged about by good laws on the subject.

The Guthrie association is the oldest in the Territory, having been in operation over ten years. They have $38,643.29 invested in real-estate securities at this time, their receipts during the past six months being $10,300. They declared two dividends of 6 per cent each during the year, and their dividends during the ten years have averaged over 18 per cent per annum. This association has aided in building nearly 200 houses in Guthrie.

The Norman association has $22,408.25 loaned on real-estate securities and is doing much to build up that town. Their dividends have averaged from 15 to 18 per cent per annum.

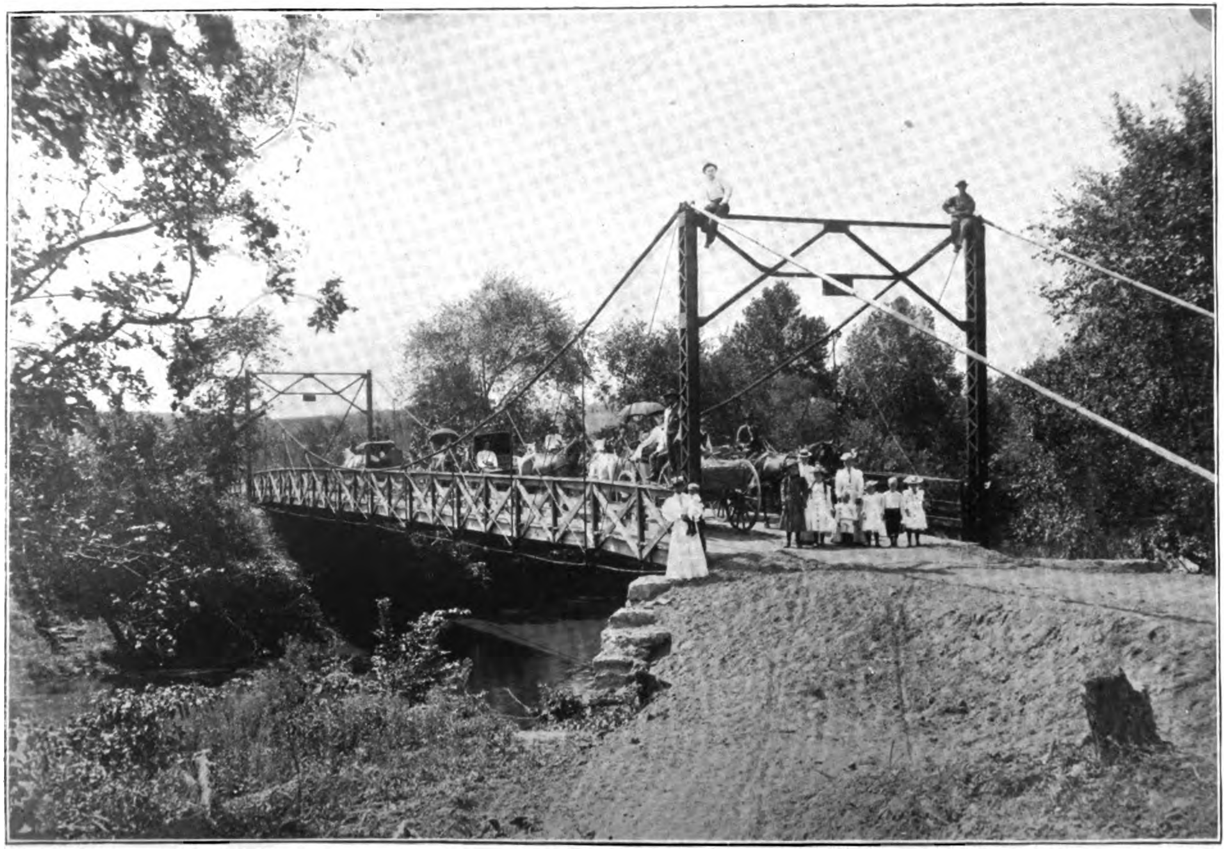
The New Century Association of Shawnee has $3,595.86 invested and is growing steadily.

The Oklahoma City Association has been doing business two years, and declared an 18 per cent dividend the past year. Their net receipts for the year were $12,000, they have $13,557 invested in securities, and are doing much to build up their city.

Twenty-one outside building and loan and investment companies have been granted permission to do business in the Territory. Some of these have failed, some quit business, and some retired from the Territory, but half a dozen or more are doing considerable business, operating in many towns, taking out large sums of money, but doing little or nothing to build up the Territory.

INSURANCE.

I give below a statement from the secretary of the Territory giving in detail the amount of business done during 1899 by the various fire,



STURGIS SUSPENSION BRIDGE NEAR PAWNEE. PATENTED AND MANUFACTURED IN OKLAHOMA.

life, and casualty insurance companies licensed to do business in the Territory. Of these there are 15 life, 46 fire, and 8 accident or casualty companies. Several farmers' mutual companies are in operation under the Territorial law allowing 1,000 farmers to organize a mutual company, and the fraternal insurance orders all do a large business in the Territory.

Fire insurance.

Name of company.	Location.	Insurance written in 1899.	Insurance written in 1898.	Premiums collected.	Losses incurred.	Losses paid.
Ætna	Hartford, Conn	$442,740.00	$297,785.00	$6,061.17	$1,717.80	$2,517.80
American Central	St. Louis, Mo	379,989.00	245,762.00	5,315.42	1,504.42	1,197.42
American Fire	New York, N. Y	33,975.00		740.24		
Do	Philadelphia, Pa	42,600.00		750.05		
Baloise						
British America Assurance.	Toronto, Canada	104,958.00	89,697.00	2,141.14	9.75	9.75
Commercial Union	London, England	179,785.00	20,913.00	3,309.45	2,577.37	1,317.87
Connecticut Fire	Hartford, Conn	975,553.00	611,915.00	14,686.42	6,210.07	2,785.07
Delaware	Philadelphia, Pa		214,420.00	2,410.50	1,338.65	701.70
Fire Association	do	402,187.00	310,413.00	10,501.31	3,314.88	2,357.02
Fort Wayne	Fort Wayne, Ind		40,420.00			
German Alliance	New York, N. Y	244,300.00	60,200.00	3,579.67	5.45	5.45
German American	do	996,300.00	586,100.55	18,766.18	1,085.90	1,406.90
Greenwich	do	143,531.47	57,760.00	2,196.62	39.22	39.22
Hamburg Bremen	Hamburg, Germany	90,165.00	9,450.00	2,208.65		
Hartford Fire	Hartford, Conn	559,148.00	447,860.00	9,619.12	884.09	1,794.36
Home	New York, N. Y	597,593.00		3,967.53	102.25	99.25
Imperial (limited)	London, England	170,175.00	41,350.00	2,844.96	670.75	670.75
Insurance Co. of North America.	Philadelphia, Pa	394,481.00	249,912.00	7,846.67	892.90	1,655.65
Liverpool, London and Globe.	Liverpool, England	913,907.00	492,876.00	11,926.48	3,187.22	2,712.22
Do	New York, N. Y					
Lion						
London and Lancashire.	Liverpool, England	467,488.00	361,778.00	10,944.09	303.06	297.86
Manchester Assurance Co.	Manchester, England	115,010.00	40,375.00	2,361.26	417.60	417.60
Merchants	Newark, N. J	201,457.00	290,504.07	4,466.16	1,571.29	1,541.87
Milwaukee Fire	Milwaukee, Wis	27,210.00	31,575.00	475.96	2,062.17	2,062.17
Milwaukee Mechanics	do	256,801.00	56,976.00	3,578.43	1,424.29	1,124.29
Netherlands						
Niagara Fire	New York, N. Y	448,543.00	348,438.00	6,901.03	545.17	845.17
North British and Mercantile.	London, England	331,383.00	174,725.00	4,951.12	121.17	121.17
Northern						
Norwalk Fire	Norwalk	36,177.00	17,217.00	683.28	33.63	31.03
Orient	Hartford, Conn	419,391.00	305,931.00	7,145.36	743.72	1,306.72
Pennsylvania Fire	Philadelphia, Pa	355,924.00	262,251.00	7,031.85	479.99	479.99
Phenix	Brooklyn, N. Y	1,270,393.00	1,113,295.00	19,095.52	6,080.36	5,677.03
Phœnix	London, England	141,070.00	20,900.00	4,010.92	3,500.00	250.28
Providence Washington	Providence, R. I	174,261.00	130,025.00	1,911.64	631.91	653.92
Royal	Liverpool, England	250,047.96	84,555.00	1,769.23	435.71	410.71
St. Paul Fire and Marine.	St. Paul, Minn	1,107,817.00	71,400.00	20,803.09	6,567.99	4,656.33
Scottish Union and National.	Edinburgh	487,729.71	237,791.36	9,451.90	5,446.02	1,306.57
Shawnee	Topeka, Kans	912,093.00	259,617.00	18,744.27	3,398.55	1,182.03
Springfield Fire and Marine.	Springfield, Mass	1,048,450.00	809,649.00	14,683.80	1,697.37	3,446.32
Sun Fire Office	London, England	24,550.00		508.47		
Traders	Chicago, Ill	237,530.00	185,380.00	5,863.34	2,422.85	1,046.95
Westchester	New York, N. Y	194,404.00	148,889.00	4,382.98	459.50	2,580.50
Western Assurance Co	Toronto, Canada	95,452.00	111,452.00	1,794.91	147.29	955.01
Total		15,274,519.14	8,839,556.98	255,425.41	62,026.36	49,663.45

Life insurance.

Name of company.	Location.	Policies issued during the year 1899.	Premiums collected for 1899.	Losses paid during 1899.	Losses incurred during 1899.
Ætna Life	Hartford, Conn				
American Union	New York, N. Y	$170,025.00	$116.16		
Equitable Life Assurance Society.	do	300,216.00	8,899.58	$8,000.00	$8,365.00
Home Insurance Co	New York, N. Y	25,500.00	2,173.73		
Kansas Mutual Life	Topeka, Kans	93,102.00	2,482.13		
Manhattan Life	New York, N. Y	25,750.00	460.88		
Massachusetts Life Mutual	Springfield, Mass	262,500.00	5,593.63		
Mutual Life	Louisville, Ky	57,500.00	3,923.92	1,000.00	1,000.00
Mutual Life of New York	New York, N. Y	500,501.00	15,314.77	11,642.00	11,642.00
Mutual Benefit Life Insurance Co.	Newark, N. J	9,138.00	175.65		
Mutual Reserve Fund Association.	New York, N. Y	211,000.00	6,538.13	6,000.00	2,000.00
New York Life	do	2,226,642.00	38,461.72	10,000.00	9,500.00
Northwestern Mutual Life	Milwaukee, Wis	585,353.00	15,117.39	3,236.00	2,236.00
Pacific Mutual Life	California	15,000.00	335.43		
State Life Insurance Co	Indianapolis, Ind	212,000.00	2,703.74		
Total		4,634,227.00	102,396.86	39,878.00	34,743.00

Miscellaneous.

Name of company.	Location.	Policies issued during 1899.	Premiums collected for 1899.	Losses paid during 1899.	Losses incurred during 1899
American Bond and Trust Co.	Baltimore, Md	$53,600.00	$279.50		
American Surety Co	New York, N. Y	500.00	10.00		
Fidelity and Casualty Co	do	1,067,513.00	4,835.89	$385.30	$385.30
Metropolitan Plate Glass Co	do	5,399.60	97.39		
Lloyd's Plate Glass Co	do	12,702.05	323.38	122.08	245.51
Maryland Casualty Co			151.00		
Travelers Insurance Co	Hartford, Conn	67,110.00	1,593.10	135.77	135.77
United States Fidelity and Guaranty Co.	Baltimore, Md	28,610.00	458.00		
Total		1,229,434.65	7,748.26	643.15	766.58

INVESTMENTS, PUBLIC AND PRIVATE CREDIT.

Little has been said in the past about Oklahoma as a field for investment. Capital, proverbially timid, is slow to enter a new and untried field.

Oklahoma attracted attention at first as a place offering homes to the homeless, and so busy were the people in settling the country that little attention was paid to capital. With the securing of stable titles and the producing of successful and abundant crops, however, capital began coming to the country. It came slowly at first, but so substantial was the Territory's securities, so favorable the seasons and sure the crops, and so varied the resources inviting development that the inflow of money the past year or two has been as great at that of population, and money can be borrowed on real estate as cheaply as in the Eastern States, while most securities command a premium and money is being offered for the development of new enterprises on every hand.

When I entered the executive office in 1897 Territorial warrants were begging a purchaser at 80 to 85 cents; now they are sought after at 96 to 98 cents. Six per cent municipal bonds which went at 90 to 95 cents then, now readily command a premium of from 1 to 2 per cent with the interest reduced to 5 percents.

The following statement by the Deming Investment Company, of Kansas City, Mo., one of the leading companies of the West and the pioneer farm loan company in Oklahoma, carrying with it the weight of experience begun as soon as our titles became legally marketable and continued with growing success up to the present time, may be considered as a fair and comprehensive review of present and past conditions as affecting this line of business in the Territory.

When we opened an office in Oklahoma City in the spring of 1893 and began making loans upon Oklahoma farms, our action had been preceded by a very thorough investigation, and was taken with full confidence in the Territory as an agricultural section, but with little anticipation of the amazing rapidity and steadiness which would characterize its forward movement in that respect, in spite of the panic of 1893 and the general hard times and tight money market of the succeeding years of 1894, 1895, and 1896. From its inception our Oklahoma business has been of a very satisfactory character. Interest on substantially all our loans has been paid promptly, and foreclosures or forced acquisitions of title to farms have been few. Outside of the care and conservatism used in selecting loans, the prime cause of this satisfactory state of affairs is the natural fertility of the soil and the equability of the climate, giving due credit, of course, to the energy of the men who took up the land and turned these natural advantages to the fullest account. In the estimation not only of loan companies but of the majority of Eastern investors in this class of securities, Oklahoma as a farm loan field is second to none in the Western States.

The people of Oklahoma have greatly profited by the great competition that has sprung up since we first commenced making loans there. The rates have materially lowered, as investors have become anxious to place their funds upon good Oklahoma farms. The business thus far transacted has been a very favorable advertisement for the agricultural advantages to be found there, and has increased the value of every well-located acre of land.

Our seven years' experience in Oklahoma has more than justified our judgment and causes us to feel the same degree of safety in placing loans in Oklahoma as we do in eastern Kansas, where we have successfully loaned for more than eighteen years, or in Missouri or Iowa, and our Eastern customers accept them with equal satisfaction. To give some tangible idea of the results of our Oklahoma business up to date, we will state that from May 1, 1893, to August 1, 1900, we have made 1,550 loans aggregating $810,006.07, of which $183,517.27 has been paid, leaving $626,488.80 in force. Of the approximately 1,550 farms upon which we have loaned we hold title to four, our Eastern clients never having taken title to one. The total delinquencies of interest on the $626,488.80 now in force is $856.34. Figuring 6½ per cent per annum on the total amount of loans now in force, being about the average rate they bear, gives a result of $40,721.77 per annum. The total delinquencies, $856.34, is about 2.1 per cent of this amount, or one-fiftieth part; a very gratifying showing, and one which reflects credit upon the resources of the soil and the debt-paying ability of the Oklahoma farmer.

H. H. Hagan, of Guthrie, Okla., who has handled many Oklahoma securities and loaned much money in the Territory, makes the following statement:

Replying to your favor inquiring as to the exact facts regarding real-estate loans and financial transactions made in the Territory, I beg to state:

I have been loaning money on Oklahoma farms since 1894. At first it was very hard to place an Oklahoma loan, as Eastern investors had been defrauded and lost a great deal of money on Western land. However, by persuasion, I induced some of my friends to invest their individual money here in the Territory on farm loans. The rate was then very high, being 12 per cent, with a commission of 5 per cent. The loans usually ranged from $200 to $400 on a quarter section. As the country developed and proved its fertility and stability of soil, the Eastern investor gradually accepted more of the loans. This morning I wrote my seven hundred and first farm loan. These loans aggregate, all told, since 1894 to this date, $321,000. During this period there has never been as much as $100 of interest in default at one time. I have had but two foreclosures, and both of these were made in order to correct the title in the land.

The current rate of interest is 8 and 9 per cent. The farm loans usually range in amount from $400 up to $600 on 160 acres of land, and some run as high as $1,200 on a good 160 acres of bottom land, and are always made on a basis of one-third of the actual cash value of the land.

> In 1898 I sold $5,000 of Payne County bonds and $4,000 of Logan County bonds to some St. Louis parties for 93 cents. These parties have since been offered 104 for these 6 per cent bonds. The purchaser of these bonds had me bid 104 for some 6 per cent Logan County twenty-year bonds some six months ago.
>
> I never saw a community wherein interest was paid as promptly as in this country, and the reason of it lies in the fact that a diversity of crops can be raised here in one season on any one farm. This diversity of crops is the real secret of the prosperity of the farmers of Oklahoma. Many a farmer has harvested a bountiful crop of wheat, corn, cotton, oats, and three crops of alfalfa hay here in one season—with a good fruit crop thrown in "on the side"—from his 160-acre farm. In what country can this showing be equaled?

PUBLIC CREDIT.

One of the large financial houses of New York City makes the following extraordinary statement relative to Oklahoma securities and the credit of the Territory:

> During the past seven or eight years we have handled more than half a million dollars of bonds issued by the Territory of Oklahoma, and by the counties, cities, and school districts in said Territory. Our experience with such securities has been eminently satisfactory. Payments of interest and principal have been regularly made, and at the present time there is not a dollar of interest in default on any Oklahoma securities that we have handled.
>
> This is a better experience than we have had with any other section of the United States. We doubt whether such a statement could be made in regard to any other State or Territory.
>
> The people of Oklahoma have shown themselves to be entitled to the very highest credit.

RAILWAYS AND TRANSPORTATION.

No new country ever had the railway facilities that have been accorded Oklahoma since the first day of the Territory's history. Railways have as a rule followed the pioneer—here they preceded him, and there are at present about 900 miles of main-track mileage in the Territory. But four counties in the Territory—Beaver, Dewey, Roger Mills, and Washita—are without mileage within their bounds, and two of these—Beaver and Washita—have lines touching their border.

I give below the main-track mileage as reported to the board of railway assessors in March, since which time about 120 miles have been built.

Railway main-track mileage by counties.

	Miles.		Miles.
Beaver	......	Logan	54.96
Blaine	8.58	Noble	39.94
Canadian	130.69	Oklahoma	87.27
Cleveland	21.63	Pawnee[1]	......
Custer	3.56	Payne	10.15
Day	3.78	Pottawatomie	30.92
Dewey	......	Roger Mills	......
Garfield	53.70	Washita	......
Grant	67.13	Woods	46.80
Greer[1]	......	Woodward	65.72
Kay	91		
Kingfisher	30.54	Total	782.33
Lincoln	35.96		

---

[1] Lines have been built into these counties since March.

I also give interesting tables relating to the assessment of the various lines of the Territory.

Statement showing assessment of railway and telegraph property in Oklahoma for the year 1900.

Company.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Atchison, Topeka and Santa Fe R. R.:						
Arkansas City Division	144.36	$934,611.88	32.02	$64,040.00	$15,050.00	$1,013,701.88
Kiowa Division	116.30	443,444.92	10.53	21,060.00	6,990.00	471,494.92
Tonkawa Division	25.01	106,682.90	5.02	10,040.00	705.00	117,427.90
Hutchinson and Southern	61.71	202,643.30	2.58	5,160.00	1,375.00	209,178.30
Eastern Oklahoma	27.64	82,920.00	....	....	....	82,920.00
Chicago, Rock Island and Pacific R. R.:						
Main line	165.43	797,933.23	20.86	41,720.00	16,320.00	855,973.23
Tonkawa Branch	26.55	85,482.76	1.30	2,600.00	1,600.00	89,682.76
Choctaw, Oklahoma and Gulf R. R	131.07	660,972.14	19.83	39,540.00	33,900.00	734,412.14
St. Louis and San Francisco R. R	84.26	374,575.06	8.49	16,980.00	16,355.00	407,910.06
Pullman Palace Car	....	14,901.89	....	....	....	14,901.89
Western Union Telegraph	....	14,029.90	....	....	....	14,029.90
Total	782.33	3,718,197.98	100.63	201,140.00	92,295.00	4,011,632.98

Telegraph property not included in returns of railroad companies.

Statement showing assessment of the Chicago, Rock Island and Pacific Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $5,000; rolling stock, $525.60; tools and materials, $20; total, $5,545.60. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Beaver	....	....	0.89	$1,780.00	$265.00	$2,045.00
Canadian	25.52	$141,523.71	7.34	14,680.00	2,660.00	158,863.71
	49.27	153,756.35	2.40	4,800.00	3,200.00	161,756.85
Garfield	29.84	165,480.70	3.53	7,060.00	3,605.00	176,145.70
Grant	30.26	167,809.85	3.29	6,580.00	2,900.00	177,289.85
Kingfisher	30.54	169,362.62	3.41	6,820.00	3,690.00	179,872.62
Total	165.43	797,933.23	20.86	41,720.00	16,320.00	855,973.23

Indian reservation attached for judicial purposes: Main track, $3,000 per mile; all rolling stock, $5,700; all tools and materials, $246.35.

Statement showing assessment of the Enid and Tonkawa branch of the Chicago, Rock Island and Pacific Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $3,000: rolling stock, $214.69; tools and materials, $5; total, $3,219.69. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Garfield	23.86	$76,821.80	0.60	$1,200.00	$1,000.00	$79,021.80
Noble	2.69	6,660.96	.70	1,400.00	600.00	10,660.96
Total	26.55	85,482.76	1.30	2,600.00	1,600.00	89,682.76

Statement showing assessment of the Arkansas City Division of the Atchison, Topeka and Santa Fe Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile:[1] Main track, $5,200; rolling stock, $1,041.26; tools and materials, $148.69; telegraph lines, $80; total, $6,469.95. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Cleveland	21.68	$140,161.32	3.45	$6,900.00	$1,415.00	$148,476.32
Kay	22.60	146,220.87	7.52	15,040.00	1,705.00	162,965.87
Logan	33.28	215,459.43	6.64	13,280.00	3,860.00	232,599.43
Noble	[2]37.25	241,005.64	6.97	13,940.00	3,825.00	258,770.64
Oklahoma	25.41	164,655.58	7.04	14,080.00	4,060.00	182,795.53
Payne	4.19	27,109.09	.40	800.00	185.00	28,094.09
Total	144.86	984,611.88	32.02	64,040.00	15,050.00	1,013,701.88

[1] Telegraph lines in Cleveland and Oklahoma counties and 13.95 miles in Logan County, $90 per mile.
[2] 26.68 miles in Indian reservation.

Statement showing assessment of the Kiowa Division of the Atchison, Topeka and Santa Fe Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $3,500; rolling stock, $249.24; tools and materials, $3.70; telegraph lines, $60; total, $3,812.94. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Day	3.78	$14,412.91				$14,412.91
Woods	46.80	178,445.59	2.85	$5,700.00	$1,215.00	185,360.59
Woodward	65.72	250,586.42	7.68	15,360.00	5,775.00	271,721.42
Total	116.30	443,444.92	10.53	21,060.00	6,990.00	471,494.92

Statement showing assessment of the Tonkawa Division of the Atchison, Topeka and Santa Fe Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $3,000; rolling stock, $1,210.42; tools and materials, $15.19; telegraph lines, $40; total, $4,265.61. Side track, $2,000 per mile.]

County.	Main track.		Side track.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Kay	25.01	$106,682.90	5.02	$10,040.00	$705.00	$117,427.90

Statement showing assessment of the Choctaw, Oklahoma and Gulf Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $4,500; rolling stock, $612.16; tools and materials, $47.63; telegraph lines, $50; total, $5,209.79. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Blaine	8.58	$44,700.00	0.59	$1,180.00	$1,500.00	$47,380.00
Canadian	39.20	204,223.77	4.05	8,100.00	2,450.00	214,773.77
	[a]16.70	87,003.41	1.87	2,740.00	1,550.00	91,293.41
Custer	3.56	18,546.85	2.81	5,620.00	2,300.00	26,466.85
Lincoln	.78	4,063.63				4,063.63
Oklahoma	31.33	163,222.71	5.01	10,020.00	5,000.00	178,242.71
Pottawatomie	25.82	134,516.77	5.90	11,800.00	21,100.00	167,416.77
	[b]5.10	4,695.00	.10	80.00		4,775.00
Total	181.07	660,972.14	19.83	39,540.00	33,900.00	734,412.14

[a] Indian reservation attached for judicial purposes.
[b] Tecumseh branch: Main track, $800; rolling stock, $120.59; total value per mile, $920.59.

BRANCH FROM FIVE-YEAR-OLD ABUNDANCE PLUM.

Statement showing assessment of the St. Louis and San Francisco Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $4,000; rolling stock, $659.73; tools and materials, $6.03; total, $4,665.76. Side track, $2,000 per mile.]

County.	Main line.		Side line.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Kay *a*	18.55	$67,987.97	1.33	$2,660.00	$1,575.00	$72,222.97
Lincoln	35.18	164,141.44	3.01	6,020.00	4,315.00	174,476.44
Oklahoma	30.53	142,445.65	4.15	8,300.00	10,465.00	161,210.65
Total	84.26	374,575.06	8.49	16,980.00	16,355.00	407,910.06

a Blackwell branch: Main track, $3,000; rolling stock, $659.73; tools and materials, $5.39; total, $3,665.12.

Statement showing assessment of the Hutchinson and Southern Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $3,000; rolling stock, $240.72; tools and materials, $3.08; telegraph lines, $40; total, $3,283.80. Side track, $2,000 per mile.]

County.	Main line.		Side track.		Improvements on right of way.	Grand total.
	Number of miles.	Value.	Number of miles.	Value.		
Grant	36.87	$121,073.71	1.97	$3,940.00	$560.00	$125,573.71
Kay	24.84	81,569.59	.61	1,220.00	815.00	83,604.59
Total	61.71	202,643.30	2.58	5,160.00	1,375.00	209,178.30

Statement showing assessment of the Eastern Oklahoma Railway Company in Oklahoma Territory for the year 1900.

[Valuation per mile: Main track, $3,000; side track, $2,000 per mile.]

County.	Main track.	
	Number of miles.	Value.
Logan	21.68	$65,040
Payne	5.96	17,880
Total	27.64	82,920

The present railway facilities of the Territory are equal to many and superior to some of the States, and the great crops of the Territory and rapid increase in population and business are bringing other lines into the Territory and causing those already here to branch out into new fields.

The main Gulf line of that greatest of American railway systems, the Atchison, Topeka and Santa Fe, crosses the eastern portion of the Territory from north to south, giving a direct line to the Gulf on the south, the markets of Kansas City and Chicago to the north and east, and those of the mountains to the west, as well as an unbroken line to the Pacific,

In the western part of the Territory the Pan Handle branch of the line runs diagonally through Woods and Woodward counties, offering ready shipment for the agricultural products and the great herds of cattle of that vast country.

The Hutchinson and Ponca City branch runs diagonally across Grant and Kay counties from Manchester through Medford and Blackwell to Ponca, and a branch line runs from Hunnewell, Kans., to Tonkawa.

The Oklahoma Eastern is a branch line of the Santa Fe, built northeast from Guthrie through Logan, Lincoln, Payne, and Pawnee counties. The present terminus is Pawnee, but it will extend on to Bartlesville, Ind. T., in the near future. They also have a branch line from Guthrie west to Cashion.

Running parallel and about 40 miles west of the Santa Fe is the Gulf line of the Great Rock Island route, reaching the Gulf ports to the south, Kansas City, Omaha, and Chicago to the north and east, and Denver and the Rockies to the west. A branch line extends west through the great Kiowa and Comanche Indian Reservation into Greer County, passing Anadarko Indian Agency and the site of old Fort Cobb. both historic points of interest, and touching Washita County at the town of Mountain View. A branch from Anadarko to Fort Sill is graded and will have track laid within ninety days.

This system also has a branch line from Kingfisher to Guthrie and one from Enid northeast to Billings, while a spur extends into Beaver County from Liberal, Kans.

Almost entirely across the southern portion of the Territory from east to west is the Choctaw, Oklahoma and Gulf Railway, soon to be a trunk line from Memphis on the east to Texas and New Mexico on the west. This line extends far into western Oklahoma, connects the Santa Fe and Rock Island in the Territory and east in the Indian Territory, connects with the Missouri, Kansas and Texas, the Frisco, the Missouri Pacific, and the Pittsburg and Gulf, all trunk lines to the Gulf or points north and east.

The St. Louis and San Francisco crosses the southeastern portion of the Territory and connects with the Santa Fe and Choctaw at Oklahoma. It gives direct connection with the mining regions of Missouri and Arkansas and with St. Louis and Kansas City and with the various other great lines leading out of these cities. A branch line also enters the northern part of the Territory from Arkansas City, Kans., running to Blackwell.

The Missouri Pacific system reaches the north line of the Territory at Elgin, Arkansas City, and Kiowa, Kans.

Every line of railway in the Territory has built extensions and made many improvements during the year, and contemplates still more progress the coming year.

RAILWAY IMPROVEMENT AND CONSTRUCTION.

SANTA FE.

D. D. Bailey, division superintendent of this line, says in a short communication:

> During the fiscal year ending June 30, 1900, we have kept up the work of putting stone ballast under the track between Arkansas City and Purcell, and will probably succeed in getting all of this track ballasted before the end of the present calendar year. We have had one crusher at Ponca supplying rock for this ballast, and up to a short time ago had one at Dougherty, Ind. T., but the latter one has been closed down and we are now getting all rock from Ponca. We have used the screenings from these crushers for raising our side and passing tracks, which has put these tracks in good shape and made them present a good appearance.

Commencing at Perry, we have changed out the old 61-pound rail, relaying the track for 40 miles south with new 75-pound steel, which, together with the ballast, makes a first-class track. A large number of our side tracks have proven too short to answer all purposes in handling our long trains, and on this account we have lengthened them. Aside from this we have put in a great many new tracks at various stations along the line to enable us to take care of the increasing business.

We still continue the work of replacing wooden bridges with permanent structures, and during the year took out wooden Howe truss bridge No. 117 over the Deep Fork River, between Britton and Oklahoma, replacing same with double stone arch; also replaced No. 118 with double stone arch. At this point we changed the line of the track materially, taking out several bad curves. Three other bridges have also been replaced with stone arches. We have now a comparatively small number of wooden bridges on the line through Oklahoma.

We are also replacing our wooden tanks with new steel tanks as fast as it becomes necessary to renew them. We have put in one steel tank at Mulhall and will shortly begin work on the tanks at Guthrie and Oklahoma.

In the line of new railroad construction, we have built the Eastern Oklahoma Railway, commencing at Guthrie and running east to Pawnee, through Perkins, Ripley, Stillwater, Glencoe, and other less important stations; the length of this road is 73.5 miles. We have also constructed a new line known as the Guthrie and Western Railway, commencing at Seward and running west to Cashion, where the line connects with a road built by the Chicago, Rock Island and Pacific Railway, running to Kingfisher. Length of the road built by the Santa Fe is 10.6 miles. The trains running over the Guthrie and Western have terminal at Guthrie, and run over the main line between Seward and that point.

Early in the year the Hutchinson and Southern Company extended their line from Blackwell to Ponca City and their entire line was afterwards acquired by the Santa Fe and is now operated as a part of their system. They contemplate an extension of the Oklahoma Eastern northeast from Pawnee to Bartlesville, Ind. T., via Pawhuska, in the near future.

ROCK ISLAND.

In response to my inquiry relative to improvements on their line R. W. Day, division engineer, responded as follows:

Replying to yours of 18th instant, please find the following statement of the improvements on our line in Oklahoma Territory during the year ending June 30, 1900.

During that period we have built miles of main and side tracks and opened stations as follows:

North Enid to Billings:	Miles.
Main track	26.74
Sidings	1.75
Total	28.49

Built depots, stock yards, laid side track, and opened stations as follows:
Cropper, 9.8 miles from North Enid.
Garber, 15.4 miles from North Enid.
Billings, 26 miles from North Enid.

Kingfisher to Cashion (formerly Downs):	
Main track	16.00
Side track	1.53
Total	17.53

Built depots, stock yards, laid side track, and opened stations as follows:
Reeding, 11.1 miles from Kingfisher.
Cashion, 16.1 miles from Kingfisher.

Chickasha Branch from Mountain View, west:	
Main track	28.96
Side track	.33
Total	29.29
Grand total of new mileage	75.31

On the last branch during the year past we have put in permanent stone foundations and steel bridges over the four crossings of the Washita River and Stone King and Rainy Mountain creeks.

We propose to extend this branch for 17.75 miles farther west, to Mangum, build depots, stock yards, lay side tracks, and open stations as follows:

Gabebo, 58.8 miles from Chickasha.
Komalta, 65.7 miles from Chickasha.
Kiowa, 72.2 miles from Chickasha.
Lone Wolf, 81 miles from Chickasha.
Granite, 88.8 miles from Chickasha.
Mangum, 97.7 miles from Chickasha.

All of the above lines have been built under the same specification as our main lines and are made as permanent as possible, using iron pipe whenever practicable, and our standard pile bridges whenever stone could not be had for culverts and larger openings.

The Rock Island also has an extension from Anadarko to Fort Sill almost graded and will complete it this fall.

CHOCTAW, OKLAHOMA, AND GULF RAILWAY.

Henry Wood, general manager, states in response to my inquiry for information relating to improvements on the line:

> We have not laid any additional track during that time nor built any new depots. We have continued the improvement of our property and are now putting in a track in Oklahoma about 60 miles of gumbo or burnt clay ballast. Our business has shown a regular and steady increase, owing, doubtless, to the influx of new population into the Territory; and the abundant crops of the present season give promise of still further growth in population. It is probable that our line will be extended west of Weatherford, through western Oklahoma, in the near future.

This company have acquired possession of the Tecumseh short line, running from Shawnee to Tecumseh, and are operating same as a part of their system.

ST. LOUIS AND SAN FRANCISCO.

B. F. Yoakum, president and general manager, furnishes the following statement of new track, improvements, etc.:

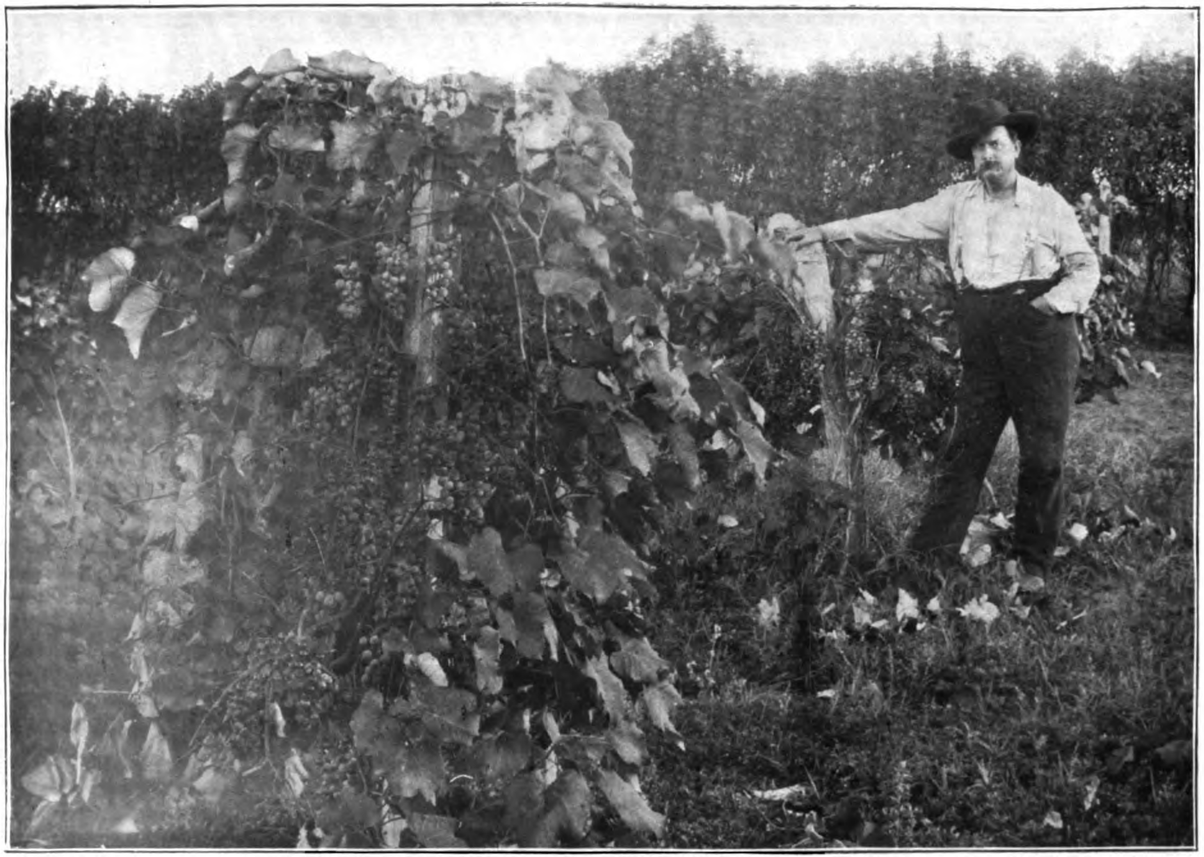
> I give you below track, bridges, and building statistics with reference to improvements in Oklahoma Territory during the year ending June 30, 1900:

New side tracks constructed	miles..	1.2
New main tracks (Blackwell extension)	do....	18.42
New depots		2
New platforms		2
New water station		1
New turntable		1

A line is now being graded from Blackwell southwest to Enid, which is to be operated as part of the Frisco line, with a still further prospective extension from Enid southeast to Wellston via Guthrie. This company is also constructing a terminal line at Oklahoma City and has an extension surveyed through the Kiowa and Comanche country.

KANSAS CITY AND ORIENT.

During the year a number of farmers of Woods and Blaine counties, anxious to secure a railway, constructed considerable grade at Okeene, Augusta, and other points as a donation to a local company. This company failed, but the right of way and completed grade was secured by A. E. Stillwell, of Kansas City, as a part of his proposed line from Kansas City to the western coast of Mexico, and work is continuing on the grade. This line, if constructed, will give western Oklahoma



Three-year-old Concord Grape Vines in Custer County.

a trunk line entirely across the Territory and be of incalculable benefit to that portion of the Territory. The proposed route crosses Woods, Blaine, Custer, Washita, and Greer counties.

RAILWAYS CHARTERED.

In addition to the list of 26 railway incorporations, with an aggregate capital stock of $105,625,000, given in my last annual report as incorporated during the preceding eighteen months, the secretary of the Territory furnishes me with the following list of companies incorporated during the year just closed:

Railways chartered in Oklahoma during year ending June 30, 1900.

The Pawnee and Arkansas Valley Railway Company, July 11, 1899. Capital stock, $100,000. Directors: C. W. Rambo, J. D. Shepard, H. C. Hanna, Robert Chasteen, O. M. Lancaster, I. K. Berry, W. L. Eagleton, C. J. Shepard, W. C. Horton, John R. Skinner, G. W. Sutton, and W. H. Herbert, of Pawnee County, Okla.

The Oklahoma City and Western Railroad Company, July 15, 1899. Capital stock, $3,000,000. Directors: C. G. Jones, H. Overholser, E. Overholser, and D. C. Lewis, of Oklahoma City, Okla., and F. H. Thwing, of Guthrie, Okla.

The Oklahoma and Gulf Railway Company, July 18, 1899. Capital stock, $3,000,000. Directors: H. C. Hanna, I. K. Berry, J. N. Coulter, O. M. Lancaster, and C. J. Wrightsman, of Pawnee, Okla.

The Enid and Tonkawa Railway Company, July 20, 1899. Capital stock, $60,000. Directors: M. A. Low, T. B. Dixey, and H. D. Crosby, of Topeka, Kans.; C. H. Thompson and Ivan G. Conkling, of Enid, Okla.

The Eastern Oklahoma Railway Company, July 24, 1899. Capital stock, $2,200,000. Directors: Aldace F. Walker, of New York, N. Y.; Edward P. Ripley and Edward B. Kenna, of Chicago, Ill.; Frank T. Dolan, of Wichita, Kans.; Henry E. Asp, U. C. Guss, and W. H. Merten, of Guthrie, Okla.

The Oklahoma, Okmulgee and Southern Railroad Company, July 28, 1899. Capital stock, $3,000,000. Directors: Gaunt Crebs, of Kansas City, Mo.; C. H. Kimball, of Parsons, Kans.; Jacob Pickens, of Neosho, Mo.; George Signor, of Shreveport, La., and Horace Speed, of Guthrie, Okla.

The Denver, Oklahoma and Gulf Railway Company, August 14, 1899. Capital stock, $8,000,000. Directors: E. C. Darley, Charles J. Dorrance, W. C. Oakley, F. K. Dorrance, and S. B. McConnell, of Chicago, Ill.; Henry Hudson, A. A. Humphrey, and James M. Brooks, of Guthrie, Okla., and W. H. McLean, of St. Louis, Mo.

The Denver and Oklahoma Central Railroad Company, August 29, 1899. Capital stock, $9,600,000. Directors: B. P. Waggoner, of Atchison; Kans.; W. S. Cade, A. J. Titus, and T. J. Beebe, of Anthony, Kans.; Ney Titus, of Guthrie, Okla.; J. A. McPhee, of Clay, Okla., and T. J. Brockway, of Augusta, Okla.

The Ozark Coal and Railway Company, September 18, 1899. Capital stock, $50,000. Directors: B. F. Hobart, of St. Louis, Mo.; W. E. Halley and S. Guerrier, of South McAlester, Ind. T.; R. E. Moist, of Panama, Ind. T.; L. F. Kramer and J. E. Crawford, of Oklahoma City, Okla.

The Kansas and Southeastern Railroad Company, November 28, 1899. Capital stock, $1,000,000. Directors: E. H. Brown, of Girard, Kans.; C. H. Kimball, of Parsons, Kans.; W. H. Parker and J. W. Howard, of Tulsa, Ind. T., and J. M. Brooks, of Guthrie, Okla.

The Oklahoma Railroad Company, December 9, 1899. Capital stock, $5,000,000. Directors: M. L. Turner, J. M. Owen, M. C. Millner, S. C. Heyman, Lee Van Winkle, S. T. Alton, C. B. Ames, J. L. Wilkin, J. H. Everest, Clifton George, and A. H. Classen, of Oklahoma City, Okla.

The Guthrie and Kingfisher Railway Company, December 29, 1899. Capital stock, $80,000. Directors: M. A. Low, T. B. Dixey, and H. D. Crosby, of Topeka, Kans.; William Grimes, of Kingfisher, Okla., and C. H. Thompson, of Enid. Okla.

The Guthrie and Western Railway Company, January 9, 1900. Capital stock, $180,000. Directors: Aldace F. Walker, of New York, N. Y.; Edward P. Ripley and Edward D. Kenna, of Chicago, Ill., and Henry E. Asp, J.R. Cottingham W. H. Merten, and U. C. Guss, of Guthrie, Okla.

The Kansas, Perry and Port Arthur Railroad Company, January 23, 1900. Capital stock, $1,000,000. Directors: R. W. Southard, C. E. Van Cleaf, F. G. Moore, T. H. Doyle, Sam B. Wadsworth, Ethan Allen, M. Burke, J. H. Bullen, J. B. Tate, W. W. Falls, and James Lobsitz, of Perry, Okla.

The Oklahoma and Southern Railway Company, February 7, 1900. Capital stock, $6,000,000, Directors: H. A. Wagner, of Omaha, Nebr.; A. J. Titus and J. B. Randels, of Anthony, Kans.; T. J. Brockway, of Augusta, Okla., and J. A. Titus, of Jefferson, Okla.

The Blackwell, Enid and Southwestern Railway Company, March 6, 1900. Capital stock, $1,500,000. Directors: Ed L. Peckham, T. S. Chambers, C. J. Peckham, and W. W. Peckham, of Blackwell, Okla.; C. E. Hunter and O. J. Flemming, of Enid, Okla., and W. C. Robinson, of Winfield, Kans.

The Kansas City, Oklahoma and Mexico Railway Company, March 16, 1900. Capital stock, $3,000,000. Directors: A. E. Stilwell, W. A. Rule, Hugh C. Ward, C. N. Atkinson, and Edward L. Massie, of Kansas City, Mo.; W. C. Edwards, of Larned, Kans., and Alva C. Springs, William H. Criley, and H. K. Ricker, of El Reno, Okla.

The Oklahoma City Terminal Railroad Company, April 7, 1900. Capital stock, $100,000. Directors: C. G. Jones, H. Overholser, D. C. Lewis, Ed. Overholser, and E. E. Brown, of Oklahoma City, Okla.

COMMERCE.

The commerce of Oklahoma has been phenomenal from the first, but the growth the past three years has been of so great proportions as to be almost beyond the belief of those who look upon the Territory as a new and undeveloped country. Oklahoma flour can be found in the markets of Europe, South America, and Asia; Oklahoma cotton goes by direct shipment to Liverpool and Japan; Oklahoma cattle fill the slaughter pens of London and Berlin; Oklahoma wheat and corn have gone to feed the famine stricken millions of India, and the products of the farms, dairies, orchards, and gardens of the Territory help supply the markets of this and other nations.

Oklahoma Territory is shipping castor beans to Europe for the manufacture of oil; peanuts to many cities and even to Paris for use in sweetmeats; cedar logs to Germany for covering pencils; butter to the city of Mexico; watermelons to Salt Lake, Denver, Minneapolis, and Chicago; chickens to New York City; eggs to London; kaffir corn to Holland, and horses and mules to Cape Town. No State in the Union has a more diversified or far-reaching export trade.

And the imports are equally as varied and great. Our people buy largely of the manufactures and products of the various States and of other nations, and the incoming railway train is laden as heavily as the outgoing in all Oklahoma.

The railways operating in the Territory years ago found their Oklahoma divisions the best-paying parts of their lines, and the traffic has increased perceptibly every month of the past three years.

I give below tables showing shipments in and out of the Territory as furnished by the different railway companies doing business here:

CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY COMPANY.

Carloads of live stock, grain, castor beans, cotton seed, hay, melons, flour and other mill stuffs, and number of bales of cotton forwarded from stations on the Chicago, Rock Island and Pacific Railway in Oklahoma Territory to all points outside of Oklahoma Territory, for the year ending June 30, 1900.

Commodities.	Carloads.	Commodities.	Carloads.
Cattle	2,607	Castor beans	8
Hogs	1,035	Cotton seed	17
Sheep	116	Hay	39
Horses	76	Melons	13
Wheat	8,498	Flour	1,556
Corn	1,122	Other mill stuffs	878
Oats	37	Cotton	a 1,736

a Bales.

Carloads of farm machinery, implements, vehicles of all kinds, emigrant movables, flour, and coal received at stations on the Chicago, Rock Island and Pacific Railway in Oklahoma Territory, for the year ending June 30, 1900.

Commodities.	Carloads.
Implements	386
Vehicles	162
Machinery	191
Flour	29
Emigrant movables	457
Coal	3,759

ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY.

Number of carloads of freight forwarded from the following stations to points outside of Oklahoma Territory.

Station.	Cattle.	Hogs.	Sheep.	Horses.	Wheat.	Corn.	Oats.	Castor beans.	Cotton seed.	Hay.	Melons.	Cotton.	Flour.	Other mill products.
Arnettville					1									
Arta		1			41									
Asp					9									
Alva	69	85	2	8	564	143					1			5
Blackwell	19	30		2	211	2							6	
Bliss	211	8		3	306	1				7	1			9
Bodock					5									
Braman	16	30			207	2				15				
Britton					6									
Cameron					3	30								
Camchester	32	26		2	4	116			5	2				
Campbell	1	12			15	3								
Capron					42	68			2					3
Chillocco					1					1				
Clide	1	1			10	32				11				
Coyle		3												
Curtis	594	5			12									
Deercreek	7	18			75	31	1		1	11				
Edmond	10	44			165	2	1					15	29	5
Gage	682		9							3				
Gibbon					10	2								
Iowa City	4	15			6	7								
Glencoe		17			1									
Goodnight	2	17			20	1								
Guthrie	102	112		17	105	7		7			50	58	15	13
Heman	579													
Kildare	8	29			250	2				4				
Lawrie					22						112			
Medford	3				26	8				5			18	4
Moore	8	47			23	8	21							
Mulhall	41	75		1	296	8	4	12	1		5	2	14	1
Nardin	9	3			89	10								
Newkirk	12	48	1	2	310	3				1		5	2	
Noble	96	27			4	85				13		4		
Noel	34													
Norman	87	94		11	36	108	17					62	56	9
Numa					20	11				3				
Oklahoma City	31	81		16	39	3	2		3			469	156	5
Orlando	11	58			120	7	1	9	6			5		
Pawnee		12			2									
Perkins	24	52		2	6	4		1	18	1		17	3	
Perry	89	228		25	707	34	1	28	38	2		6	182	74
Ponca City	45	291		9	533	6		1					24	6
Purcell	370	119	1	17		6	5					30		12
Reed										4				
Red Rock	543	97			272			2						
Ripley	2	34			4					1				
Russell					2									
Seward	1	3			173	1				2	33	3		
Stillwater	3	50			2	1						1		
Sumpter					2									
Tonkawa	86	60			498	48					2			
Wakita	1	25			17	90	2			3				
Waterloo					1	2	2			1	3			
Waynoka		3			13	4		1					1	

Number of carloads of freight forwarded from the following stations to points outside of Oklahoma Territory—Continued.

Station.	Cattle.	Hogs.	Sheep.	Horses.	Wheat.	Corn.	Oats.	Castor beans.	Cotton seed.	Hay.	Melons.	Cotton.	Flour.	Other mill products.
White Eagle	357	4	5	1	61									
White Head										16				
Woodward	1,059	13			19	9		7		3				1
Manchester	1				1		16			1				
Total	5,250	1,877	18	116	5,367	905	73	68	74	110	207	677	506	147

Number of carloads of freight received at the following stations from points outside of Oklahoma Territory.

Station.	Farm machinery and implements.	Vehicles.	Emigrant outfit.	Coal.	Flour.
Arta	1			3	
Alva	29	15	56	169	80
Blackwell	5	1	2	64	29
Bliss	8	1	10	17	2
Braman	6		6	46	2
Britton			4		
Camchester	4	1	2	25	7
Campbell	1			1	1
Capron			3	14	3
Clyde				8	
Coyle	1				
Cross					1
Curtis			14		9
Deer Creek	5			30	4
Eagle Chief			2		
Edmond	9		38	54	
Gage			4		11
Glencoe	2			2	4
Guthrie	34	18	47	280	50
Iowa City	1	1			3
Kildare	5		4	39	5
Lawrie			1		
Medford	2		5	16	
Moore			7	15	
Mulhall	6	1	13	52	8
Nardin	4			27	1
Newkirk	15		28	149	29
Noble	1		2		
Noel			2		
Norman	15	8	14	132	9
Oklahoma	13	3	53	23	9
Orlando	2	1	13	34	7
Pawnee	3				4
Perkins	7	2	9	8	10
Perry	55	22	77	396	39
Ponca City	28	11	24	145	65
Purcell	8	4	3	51	13
Red Rock	11	2	7	30	4
Ripley	9	1	3		11
Seward			1	14	
Stillwater	10		4	14	13
Tonkawa	7	2	1	67	22
Wakita	2		6	25	6
Waterloo			2		
Waynoka	2	1	2	4	15
White Eagle				5	
Woodward	6		51	26	45
Virginia				1	
Shattuck			1		2
Tandy			2		
Goodnight					1
Total	317	95	523	1,986	524

NOTE.—No carload shipments of commodities named in this statement were received at the following stations during the period covered: Alston, Arnettville, Asp, Blackbear, Bodock, Gibbon, Goodwin, Heman, Otoe, Russell.

TYPICAL SCENE IN EASTERN OKLAHOMA.

ST. LOUIS AND SAN FRANCISCO RAILWAY COMPANY.

Number of cars of various commodities shipped from and to various stations in Oklahoma during year ending June 30, 1900.

FORWARDED.

From—	Cattle.	Hogs.	Horses.	Wheat.	Corn.	Castor beans.	Hay.	Melons.	Cotton, bales.	Flour.	Other mill stuff.	Total cars.
Stroud	3	43	1	33	12	9	2	1	6,158	......	8	112
Chandler	9	18	......	......	20	......	......	......	5,797	......	......	47
Wellston	......	3	......	......	18	......	......	2	2,548	......	......	23
Luther	......	5	......	12	7	......	......	......	1,316	......	......	24
Jones City	......	1	......	31	......	......	......	......	712	......	......	32
Oklahoma	6	......	......	55	......	......	......	4	12,518	26	2	93
Middleton	......	......	......	1	......	......	......	......	......	......	......	1
Peckham	......	......	......	172	......	......	......	......	......	......	......	172
Blackwell	15	......	......	398	......	......	1	......	......	......	......	414
Total	33	70	1	702	57	9	3	7	28,549	26	10	918

RECEIVED.

To—	Farm machinery and implements.	Vehicles.	Emigrant goods.	Coal.	Flour.	Total.
Stroud	28	5	11	64	17	125
Doggett	1	....	....	....	....	1
Chandler	15	8	10	2	10	45
Wellston	3	....	1	....	....	4
Luther	6	....	....	2	1	9
Jones City	....	....	1	4	....	5
Munger	....	....	1	....	....	1
Oklahoma	41	18	35	192	1	287
Peckham	4	....	1	60	....	65
Blackwell	13	1	3	104	4	125
Total	111	32	63	428	33	667

TELEGRAPH AND TELEPHONE.

Every city, town, or station on a railway in Oklahoma has the excellent service of the Western Union Telegraph Company, which is being rapidly extended as new lines of railway are constructed.

A majority of the towns reached by the telegraph also have telephone connection with each other and with some of the towns not reached by the telegraph service.

The Missouri and Kansas Telephone Company has exchanges at Guthrie, Oklahoma City, and El Reno, and long-distance lines reaching the following places: Blackwell, Cears, Chilloco, Chickasha, Ind. T., Council Grove, Chandler, Choctaw, Darlington, Dale, Duck Creek, Edmond, El Reno, Fort Reno, Harrah, Jones City, Kildare, Kingfisher, Lexington, Luther, Morris Store, Minco, Moore, Mulhall, McLoud, Medford, Newkirk, Norman, Noble, Okarche, Oklahoma City, Orlando, Otoe, Perry, Purcell, Ponca City, Pond Creek, Union City, Seward, Sac and Fox, Stroud, Shawnee, Wellston, Waterloo, White Eagle, Tecumseh Tonkawa, Virginia, Yukon, Enid, Kremlin, Jefferson, Renfro, and Red Rock.

The Arkansas Valley Telephone Company have exchanges at Stillwater, Perry, Pawnee, Chandler, Ponca, Blackwell, and Tonkawa.

They have long-distance lines connecting the following places: Guthrie, Edmond, Oklahoma City, Orlando, Mulhall, Perry, Ponca, Newkirk, Kildare, Blackwell, Tonkawa, Medford, Pond Creek, Kremlin, Enid, Hennessey, Kingfisher, Okarche, El Reno, Cashion, Billings, Garber, Perkins, Ripley, Stillwater, Glencoe, Pawnee, Cleveland, Blackburn, Jennings, Cushing, Stroud, Shawnee, Chandler, Wellston, and a number of other places, including every town in Kay, Noble, Payne, Pawnee, Logan, and Lincoln counties.

There are independent exchanges at Shawnee, Kingfisher, Enid, Alva, and Weatherford.

The Independent Telephone Company has a line connecting Enid, Lahoma, Carwile, Alvaratta, Alva, and other towns in that vicinity.

An independent line connects Weatherford, Arapahoe, Colony, Seger, Cloud Chief, and Cordell.

There are many private lines between towns and ranches in western Oklahoma, and in Beaver County there is telephone connection between many ranches upon the wire fences.

CLIMATIC DATA.

It is with pleasure that I present herewith the following data upon the various phases of the climate of Oklahoma and the Indian Territory, prepared by C. M. Strong, section director for the Oklahoma and Indian Territory section of the climate and crop service of the United States Weather Bureau, giving, as it does, a most comprehensive idea of the climatic conditions prevailing here:

CLIMATIC DATA FOR OKLAHOMA AND INDIAN TERRITORY.

The following tables cover the principal climatic features of the Oklahoma and Indian Territory section, embracing within its confines that portion of the United States extending from north latitude 33° and 40′ to 37° and from west longitude 94° and 28′ to 103°.

Gradually rising from an elevation of 500 to 3,000 feet above sea level, the land extends, over the major portion, in long, rolling plains, broken occasionally near the water courses by more abrupt but slight elevations.

A range of hills extending from its east central to southwest border, in a wide-spreading curve, gradually increasing in elevation and terminating in the Wichita Mountains, adds a variety to the otherwise monotonous rolling character that is very charming, and at many points affords magnificent views. Added diversification to the landscape is given by the many large rivers and streams, whose banks are usually heavily timbered and having broad valleys highly cultivated.

The principal rivers, extending generally from northwest to southeast through the full width of the section, are the Arkansas, Canadian, and Red rivers, with their branches, the Cimarron, North Canadian, and Washita rivers. These streams, with their numerous branches, give abundant water facilities to all portions of the section, and an almost perfect system of drainage, carrying off, except in extreme cases, the surplus water without damage to the adjoining country.

The surface soil is mostly of a rich red clay or sandstone decomposition mixed, in the valleys, with black alluvial deposits, and is highly productive, as shown by the rich results to the husbandman during the past three years. The soil is of sufficient depth and character to

BEN DAVIS APPLES, GROWN BY FRANK HOUSEHOLDER, LOGAN COUNTY.

render it almost inexhaustible, and it will stand many successive crops before needing fertilization.

Owing to climatic advantages, due to its far southern situation and elevation, no other portion of the United States has such a diversification of crops, covering, as they do, wheat, oats, rye, barley, corn, cane, broom corn, millet, many cultivated and wild grasses, cotton, and many other kinds of grain and vegetables, and large and small fruits. It is almost impossible for the agriculturist to make a total failure in his products in any one year, due to drought or any other damaging weather condition. If conditions are unfavorable during one portion of the growing season, he has always the resource of the remainder to change his crops and make a successful result.

A great feature of its far southern situation is the advantage given the agriculturist of continuous outdoor work during all seasons of the year, the cold winter periods lasting but a few days, and at no time interfering with farm work.

Taken in comparison with more northern States, this may truly be termed the "Land of the Fair God," and a paradise for the agriculturist.

Following are tables showing climatic features:

Monthly and annual mean temperatures.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
1892	34.1	43.8	46.9	60.9	66.8	73.6	81.8	80.0	73.0	63.2	47.0	37.0	59.0
1893	37.3	37.5	50.5	62.3	66.0	77.6	83.2	77.1	73.3	62.2	46.4	44.8	59.8
1894	38.3	35.4	53.4	63.9	69.0	77.3	81.6	78.8	74.8	64.1	50.1	41.9	57.4
1895	35.1	31.6	51.1	64.0	69.9	77.3	79.2	79.2	77.3	56.9	46.6	39.4	59.0
1896	40.3	43.4	46.8	66.1	75.4	78.9	82.0	84.2	72.8	60.0	47.3	44.4	62.0
1897	34.7	42.7	51.2	59.9	67.1	77.4	82.4	79.4	74.9	65.7	49.6	36.6	60.1
1898	40.0	44.3	48.8	58.2	68.9	77.4	80.0	78.9	74.1	60.1	45.6	34.7	59.2
1899	35.1	27.9	46.8	59.7	71.4	73.7	79.8	85.6	72.9	65.9	52.9	38.7	59.2
1900	41.3	37.5	49.9	61.3	68.1	77.7	79.3	......	......	......	......	......	......
Average	36.9	38.2	49.4	61.9	69.3	76.6	81.2	80.4	74.1	62.1	48.2	39.7	59.5

Monthly and annual maximum temperatures.

1892	75	80	90	98	98	104	112	109	105	98	80	82	112
1893	79	82	96	102	104	112	109	106	108	99	94	80	112
1894	80	75	94	97	98	107	114	109	109	95	89	85	114
1895	77	78	94	98	100	105	106	106	108	96	86	86	108
1896	79	78	90	99	108	109	109	115	107	98	91	87	115
1897	77	90	90	97	95	109	110	108	108	99	89	81	110
1898	77	82	85	96	101	102	109	107	106	110	88	77	110
1899	72	84	89	97	98	106	106	113	105	99	90	79	113
1900	82	77	95	92	97	106	......	......	......	......	......	......	......

Monthly and annual minimum temperatures.

1892	−14	−10	− 3	23	32	41	49	47	40	28	19	−3	−14
1893	− 7	− 3	5	24	29	45	56	45	40	24	9	7	− 7
1894	−15	−15	9	28	30	40	49	46	35	26	2	−8	−15
1895	−16	−21	6	28	33	48	50	56	30	21	6	−8	−21
1896	2	8	9	20	39	45	54	48	29	27	0	8	0
1897	− 6	10	10	28	36	36	48	51	36	28	7	0	− 6
1898	7	9	7	18	31	52	51	52	35	21	5	−2	− 2
1899	− 7	−25	4	18	37	52	59	59	32	22	18	−2	−25
1900	2	− 3	12	25	39	50	......	......	......	......	......	......	......

Monthly and annual precipitation.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
1892	0.46	2.02	2.89	2.25	9.70	3.05	2.61	4.03	1.62	5.23	0.63	3.66	38.15
1893	0.63	1.07	1.47	2.71	2.68	2.12	3.48	5.16	3.18	0.15	1.51	1.33	25.49
1894	2.83	1.84	2.97	4.26	3.25	1.55	1.72	1.51	2.73	1.89	0.30	1.22	25.57
1895	1.07	0.56	0.72	1.24	2.91	5.78	5.58	5.06	1.10	3.14	3.79	4.13	35.09
1896	1.04	0.66	1.09	1.49	3.79	3.28	2.96	1.46	2.19	2.75	1.83	1.24	23.78
1897	1.87	0.96	4.16	5.38	5.20	3.12	2.05	3.12	1.86	1.37	0.51	1.01	30.61
1898	3.09	2.50	3.87	1.52	8.16	4.64	4.44	3.26	2.24	1.96	1.04	2.73	39.45
1899	1.01	0.56	0.85	3.62	6.00	5.06	6.05	0.87	1.90	4.30	4.01	1.84	36.07
1900	0.69	1.44	0.76	4.44	4.59	2.58	4.15	......	......	......	......	......	......
Average	1.47	1.20	2.25	2.81	5.21	3.70	3.60	3.06	2.10	2.60	1.70	2.17	31.78

Greatest precipitation in twenty-four consecutive hours.

1892	......	1.38	4.23	5.97	4.97	2.30	3.50	2.86	2.21	3.50	0.90	3.25	5.97
1893	2.60	1.32	1.43	4.03	2.75	2.10	1.40	4.02	3.79	0.88	1.65	2.27	4.03
1894	3.37	6.00	3.90	3.65	2.60	3.57	1.95	1.95	3.64	2.77	1.16	1.77	6.00
1895	1.20	3.00	2.16	2.00	4.50	4.20	4.00	3.85	2.84	1.95	3.97	7.15	7.15
1896	1.20	1.78	1.10	2.80	6.02	3.00	3.70	2.04	2.00	3.00	3.00	2.67	6.02
1897	6.20	1.10	3.74	7.30	4.34	4.75	3.28	3.90	4.62	2.00	1.37	2.27	7.30
1898	2.25	5.40	2.74	4.25	7.60	2.80	4.01	6.70	6.00	4.16	2.22	4.11	7.60
1899	1.30	1.83	1.35	2.40	5.30	2.50	7.60	1.70	2.78	4.46	4.66	2.11	7.60
1900	1.20	3.50	1.81	3.75	3.45	2.45	......	......	......	......	......	......	......

Monthly and annual mean wind directions.

1892	N.	N.	N.	S.	S.	S.	S.	S.	S.	S.	N.	N.	S.
1893	N.	N.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.
1894	S.	N.	S.	S.	S.	S.	S.	SW.	S.	S.	S.	S.	S.
1895	N.	N.	S.	S.	S.	S.	S.	S.	S.	S.	S.	N.	S.
1896	N.	N.	N.	S.	S.	SE.	S.	S.	S.	S.	S.	SE.	S.
1897	N.	S.	S.	S.	S.	S.	S.	S.	S.	S.	S.	N.	S.
1898	S.	N.	S.	S.	S.	S.	S.	S.	S.	S.	S.	N.	S.
1899	S.	N.	N.	S.	S.	S.	S.	S.	S.	S.	S.	N.	S.
1900	S.	S.	S.	S.	S.	S.	......	......	......	......	......	......	......

From the preceding tables the following results may be summarized for the past nine years:

The mean annual temperature, in degrees Fahrenheit, was 59.5; the highest annual, 62 in 1896, and lowest, 57.4 in 1894.

The maximum temperature was 115 in 1896, and the minimum, 25 below zero in 1899.

The mean winter seasonal temperature was 38.4; the highest, 41.4 in 1895, and lowest, 32.6 in 1898. The mean spring seasonal temperature was 60.2; the highest, 62.8 in 1896, and lowest, 58.2 in 1892. The mean summer seasonal temperature was 79.4; the highest, 81.7 in 1896, and lowest, 78.5 in 1892. The mean autumn seasonal temperature was 61.9; the highest, 63.9 in 1899, and lowest, 60 in 1896.

The greatest annual range of temperature was 138 in 1899, and the least, 112 in 1898.

The mean annual precipitation, in inches and hundredths, was 31.78; the highest annual, 39.45 in 1898, and lowest, 23.78 in 1896. The average winter seasonal precipitation was 4.81; the greatest, 6.10 in 1897, and the least, 2.85 in 1894. The average spring seasonal precipitation was 10.27; the greatest, 15.74 in 1897, and the least, 4.87 in 1895. The average summer seasonal precipitation was 10.37; the greatest, 16.42 in 1895, and the least, 4.78 in 1894. The average autumn seasonal precipitation was 6.40; the greatest, 10.21 in 1899, and the least, 2.85 in 1894.

The greatest local monthly rainfall was 14 at Fort Sill, in July, 1899, and the least, 0.00 at Fort Sill, in October, 1893; Healdton, Mangum, Ryan, and South McAlester, in August, 1899; Jefferson, in November, 1897; Mangum, in November, 1894, and March, 1895, and Tulsa, in September, 1897.

The average number of clear days was 201; fair days, 93; cloudy days, 71; rainy days, 58.

The prevailing wind direction was south.

The accompanying charts, also prepared by Director Strong, present to the eye at a glance the important comparisons of rainfall and temperature in the different portions of the Territory for the year 1899 and for an average of the past nine years:

STORMS.

Oklahoma is not the home of the tornado, the dwelling place of high winds, nor the abode of drought and sunstroke, as some correspondents of Eastern journals have essayed to make it.

It is as free from storms as the Middle or Eastern States. There has not been a single casualty from these sources for over three years, while many other sections of the country have been visited by cyclones and other storms of the most destructive form.

AGRICULTURAL EXPERIMENT STATION.

This institution is located at Stillwater and is a department of the agricultural and mechanical college. Its work during the past year has continued to be closely confined to the study of questions bearing upon animal husbandry and the production of orchard and small fruits. To those not conversant with the methods and purposes of experiment station work this may seem a narrow and restricted field, but such is not the case. Each year the efforts of the station for the improvement of agricultural practices are more fully appreciated and put to practical use by the farmers of the Territory.

On the station farm field experiments are being carried on with each of the many crops that may be grown in Oklahoma. In the feed yards the crops that are grown are fed to steers, hogs, and sheep, and the relative value of each for different purposes is determined. This work is controlled by digestion experiments and chemical analyses, thus making the results complete.

In the orchard fruits are being tested on an extensive scale. These tests include varieties and methods of culture, and results of much value are being secured. A forestry plantation of nearly 40,000 trees furnishes an illustration of what may be done with little cost, and is already beginning to yield a revenue.

Diseases of live stock, especially Texas fever and blackleg, are being studied and assistance is being given the stockmen in their efforts to stamp out disease. The flora of the Territory and injurious insects receive the attention which they merit and assistance is furnished fruit growers who wish to get rid of troublesome insects and fungus diseases.

Each of the departments of the station is now installed in quarters well suited to the work in hand. Many improvements have been made in the number and arrangement of the farm buildings, so that the experimental work could be carried on more accurately.

Four bulletins and an annual report were issued in editions of 15,000 each during the past year and sent out to the farmers of the Territory. In addition, press bulletins were issued monthly and sent to the newspapers. The mailing list of the station now contains about 14,000 names and is increasing rapidly. As the true character of the work of the station is becoming better known the correspondence is rapidly increasing, and the station is enabled to render more completely the service which should be expected of it. In the main, this must be in the nature of investigation, the educational work being done by the college, of which the station is a department.

DIVERSIFIED FARMING IN OKLAHOMA.

Ten years of experience in a new and untried section of country, such as was Oklahoma so short a time ago, has developed and indicated to a great extent its possibilities. The peculiarities of soil and climate are, in a measure, known and understood by those who till the soil, sow the seed, and reap the harvest.

Perhaps the greatest single feature that is most fully recognized is the unusual number and variety of products that may be grown and matured. The farmers who came to the new country were from every State in the Union and brought with them knowledge of the crops and methods to which they were accustomed. Farmers from the States north, south, and east settled in the same township, and the result has been a system of agriculture which is unique in many ways. The nature of the population has been such as to preclude the hazardous system of growing only one or two crops. Exactly the opposite, a wide diversification, has contributed largely to the prosperity enjoyed during the past decade by the farmers of the Territory.

Certain lines of agricultural industry may be handled best by specialists, but for the greatest number a judicious diversification is desirable.

Nowhere else in America has the farmer so great variety of products to choose from as here in Oklahoma, and nowhere else can he be more uniformly successful along any one line of agriculture, horticulture, or stock raising. Among the many things which are successfully produced upon Oklahoma farms are the following:

AGRICULTURE.

Wheat.
Corn.
Cotton.
Kafir corn.
Cowpeas.
Castor beans.
Peanuts.
Cane.
Broom corn.
Soy beans.
Alfalfa.
Watermelons.
Cantaloupes.
Cabbage.
Turnips.
Tomatoes.
Potatoes.
Sweet potatoes.
Beans.
Beets.

HORTICULTURE.

Apples.
Peaches.
Pears.
Plums.
Apricots.
Cherries.
Prunes.
Nectarines.
Almonds.
Quinces.
Strawberries.
Blackberries.
Dewberries.
Raspberries.
Gooseberries.
Currants.

LIVE STOCK.

Horses.
Mules.
Cattle.
Sheep.
Hogs.
Goats.
Chickens.
Turkeys.
Ducks.
Geese.
Guineas.

With this list to choose from a man can surely find the things suited to his taste or abilities and the location and character of his farm.

A DREAM.

Several weeks ago a party of newspaper writers and artists, representing the great Eastern Newspaper League, composed of Boston, New York, Philadelphia, and Baltimore papers, visited Oklahoma to learn of the resources and progress of this wonderful country, having had their curiosity and interest aroused by a perusal of my last annual report.

Later they visited Salt Lake City, and while there took charge of the Salt Lake Herald and got out a special edition, conducting the paper in all its departments for one day. The representatives of the league said many good things about Oklahoma in this issue. In the column prepared by Frank Henley, the artist, we clip the following reference to Oklahoma, "The garden spot of the world":

> As we sit calmly down and dream of the trip through Montana and North Dakota, we mentally take a bird's-eye view of the vast area like a rolling sea, and as the daily breeze like a trade wind tugs at our hats, we flit over the towns and villages to satisfy our inquisitiveness as to the condition of the crops. Some sections are prosperous, and we feel glad; some sections of the Dakotas are suffering from drought, and we sympathize with the disheartened. Now, our memory takes a long leap and lands us in the midst of ripening grain. Everywhere the eye is gladdened by the sight of the rich harvests. Immense stacks of wheat are on every hand, and the broad fields are covered with a bounteous yield. How thick it grows! What tall cornstalks! Yes, we measure the corn and find it 16 feet high. We are surprised to hear that the crops are sure on account of plenty of rain, that the soil needs no fertilizer, and almost every kind of fruit flourishes well. Here, then, our impression is, is the ideal home for the farmer, where he can count on cool nights for rest as an assured fact.

WHEAT GROWING.

The immense wheat crop of the Territory the past three years has been the one thing largely instrumental in attracting the attention of the entire nation to Oklahoma. For an unknown and untried country scarcely heard of in the markets of the world to unexpectedly put a score of million bushels of wheat on the market was something to startle everybody. And now for the third consecutive year the Territory has produced a record-breaking crop, both as to aggregate yield and yield per acre. The wheat crop of the Territory will this year reach close to 25,000,000 bushels, and the railway companies will be pushed for cars to handle the crop.

There are many authenticated yields of from 40 to 50 bushels per acre, and 35 bushel yields are very common, yet owing to improper planting by many and unfavorable weather preceding and during harvest in some sections the average yield per acre over the Territory will, I believe, be from 18 to 20 bushels per acre.

History is repeating itself in Oklahoma. Too many farmers are growing nothing but wheat. They did the same thing elsewhere and found that no soil was so good but that it could be exhausted.

There are, however, many mitigating circumstances, and Oklahoma wheat growers have had excellent reasons for growing nothing but wheat up to the present time. Money was needed, and wheat growing has brought the money. The change from the sod house to the comfortable dwelling has been rapid, and tends to inspire increased confidence in the crop that has brought it about. There is perhaps nothing else that would have done it so quickly.

Many wheat growers have paid for their farms with a single crop. Mortgages have been paid off, comfortable homes erected, farms stocked, the family provided for, and sons and daughters educated by the wheat crops of the past few years.

The favorable season for planting, the early harvest, the long season for threshing, the excellent winter pasturage from the growing crop, all unite to make wheat growing attractive and profitable.

The results of trials at the experiment station at Stillwater and the practical experience of wheat growers all over the Territory show that early plowing and early sowing for wheat have given the highest yields and the best wheat. At the experiment station wheat on ground plowed on July 19 yielded a little more than twice as much as that plowed on September 11, the seeding in both cases being done on September 15. Wheat seeded September 15 yielded 37; October 15, 35, and November 15, 23 bushels per acre. The early seeding was much less affected by rust than the late seeding.

As to varieties, the hard wheats as a rule are preferred in the western half of the Territory and the soft wheats in the eastern. At the station the highest yield, 44.52 bushels per acre, was obtained from Sibley's New Golden; the lowest, 37.70, from Big English. German Emperor, Turkey, Pickaway, Red Russian, Early Ripe, Fulcaster, New Red Wonder, Fulz, Missouri Blue Stem, and early Red Clawson all gave satisfactory yields.

CORN.

Corn can be successfully grown in the greater portion of Oklahoma. Many mistakes of unseasonable planting, unsuitable varieties, and improper locations were made during the first years of the Territory's history.

With the experience gained by repeated trials and some failures, the Oklahoma farmer has learned the proper conditions under which to grow corn with success, and it is one of the leading crops of the Territory.

Most of the corn raised in Oklahoma is fed to stock upon the farm or the neighboring range, and it has been hard to obtain accurate statistics of the acreage or yield in the Territory.

By diligent inquiry in every section of the Territory and with the assistance of estimates from leading grain and stock men, I am led to believe that the corn crop of the Territory for the past year was in excess of 60,000,000 bushels and will reach nearly 70,000,000 this year.

A mistaken notion prevailed for some years that corn could not be successfully raised very far west of the center of the Territory, but a visit to the great corn fields of Dewey, Custer, Washita, and Greer counties will convince one of the fallacy of such an opinion. The thousands of acres of corn in the fertile Washita Valley, in the Kiowa and Comanche Reservation, and Washita County are as fine as can be found anywhere in the Mississippi Valley, and the Custer County corn exhibit made at various Territorial fairs last year was one of which any corn country could well be proud.

I have plucked ears of corn 8 feet from the ground and measuring 14 inches in length and 10 inches in circumference in the Washita Valley, and seen a field of corn in the Kiowa and Comanche reservations, southwest of the Wichita Mountains, which will yield 60 bushels per acre.

While corn under proper conditions can be grown successfully in almost every portion of the Territory, the farmers in even the great

A YARD OF CORN, RAISED BY CHAS. MOORE, PAWNEE COUNTY.

corn belt of Pawnee, Payne, Lincoln, Pottawatomie, and Cleveland counties realize the danger of drought likely to visit any portion of the country and have not devoted themselves exclusively to corn growing.

COTTON.

Cotton may be grown with profit throughout Oklahoma, and the acreage is being rapidly increased. The average yield per acre is equal to that of any other cotton-producing section; the fiber is of superior quality, equal to the best sea-island grades, and commands an advance price over Southern cotton.

The cotton crop of the Territory in 1899 was about 125,000 bales, which brought into the Territory over $5,000,000 of new money, while the seed products kept four large oil mills in operation, making large shipments of oil, and many thousands of cattle were fattened upon the hulls and oil meal.

The Oklahoma Agricultural Experiment Station has conducted an inquiry concerning the cotton crop in parts of Noble, Lincoln, Logan, and Payne counties. Eighty farmers in these counties were interviewed, and the results of their experience and observation with this crop have been summarized. Ten per cent of this number regarded the growing of cotton as unprofitable. The average area devoted to cotton was 15 acres, and the yield during the fall of 1899 varied from 500 to 800 pounds of seed cotton per acre. This cotton was sold for $1.90 to $2.20 per hundred pounds, with an estimated profit of from $5 to $10 per acre.

It is the general opinion that the growing of a limited amount of cotton will prove continuously profitable. This crop has its place in the great diversification of crops possible here, and there seems to be no tendency toward making the great mistake of going into exclusive cotton culture.

The acreage this year is much greater than in 1899, and if the present favorable conditions continue until the close of the season the yield will likely exceed 150,000 bales.

OATS.

It is only within the past few years that much attention has been paid to the raising of oats in the Territory. A large acreage was planted to oats this year, and the yield was excellent in almost every locality. Many thrashing reports are made of fields running from 90 to 110 bushels per acre, and the general average was in excess of 50 bushels. The estimated crop for the Territory this year is 12,000,000 bushels.

GRASSES.

It has been said that no country has ever advanced to the highest grade of civilization save over a grass soil. If there is truth in this adage and the degree of civilization attained by a country is proportionate to extent and quantity of her grass area, Oklahoma can boast of the highest civilization of the age.

The native grass pastures of the Territory are not exceeded anywhere on the continent. From time immemorial Oklahoma was one vast waving field of luxuriant grass, which made a great pasture which the cattlemen put forth their utmost efforts to retain possession of. Hundreds of thousands of cattle fattened upon these pastures before the Territory was opened, and before the cattle the buffalo roamed in untold numbers.

Much of this luxuriant pasture is to-day great fields of cotton, corn, wheat, and other agricultural products, but in the great Indian reservations, on the vast areas of Government lands in the extreme west, and everywhere the soil has been left undisturbed grass is still affording food for herds both summer and winter.

Many of the native grasses of the Territory cure upon the stalk and with the seed afford an excellent food for cattle, horses, or sheep the year round, keeping them in excellent condition with little or no grain. It is no uncommon sight to see native grass from 3 to 6 feet tall in the river bottoms, and 1 to 2 feet on uplands.

A million or more tons of prairie hay is made each year upon the far-stretching native meadows.

Some of the tame varieties of grass are being tried with more or less success over the Territory. Bermuda does well in the southern portion of the Territory, and timothy and several varieties of clover promise well in some sections. Texas blue grass is spreading spontaneously in some sections. The best success has been attained with alfalfa. Experience with this valuable hay crop has shown that it will thrive in many sections of Oklahoma, and the acreage of it should be increased. A careful survey of the reported failures leads to the conclusion that too close pasturing has been the usual cause. Many fields of alfalfa have been ruined by this method, while fields close at hand that have been cut for hay and pastured but little are in excellent condition.

Alfalfa has a long tap root and will not do well on soils with hardpan close to the surface. It thrives best on soils that have been plowed deep and well cultivated.

Continued effort should be made to increase the acreage of alfalfa in the Territory. This should be regarded as a crop for hay rather than for pasture.

KAFFIR CORN.

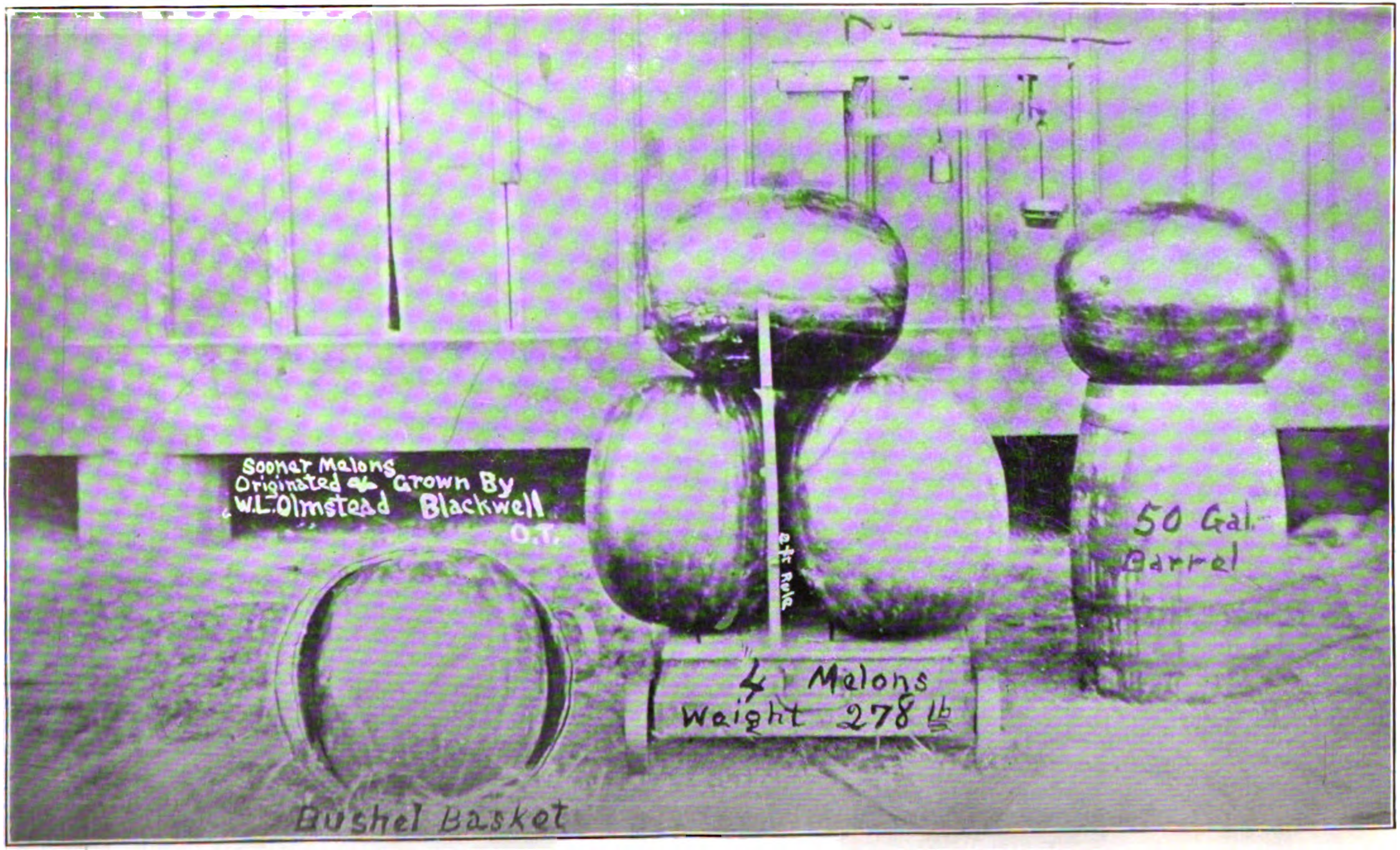
This is a comparatively new crop and one that is practically unknown to Eastern farmers. It has much to recommend it to those in Oklahoma who have upland farms and is being largely used by them as a substitute for corn. It is well suited for this purpose. The absence of an outside market for the grain is an advantage rather than a hindrance, as it makes stock raising almost a necessity.

The fodder is greatly relished by stock and the grain is equal to corn in every particular.

Poultry do especially well on it, and kaffir meal and flour make most palatable bread, cakes, and biscuit. The yield of grain averages from 60 to 90 bushels per acre.

BROOM CORN.

Whenever given proper care and attention, broom corn has done well in Oklahoma, and many farmers have realized large profits from growing it.



KAY COUNTY WATERMELONS.

The high prices received last year for this crop have caused a renewal of interest, and many with no experience are thinking of growing it the coming season.

The yield per acre in the Territory has been from one-fourth to one-half tons of the cured product.

Several large broom factories are now in operation in the Territory and afford a home market for the product.

CASTOR BEANS.

The growing of this crop is confined chiefly to Logan, Payne, Kingfisher, Blaine, and Noble counties, but almost every county has a small acreage. The extent of the crop in the counties named is due to the fact that it has been grown there for a longer time than elsewhere, and probably not because of any special climatic or soil conditions. This crop could be extended with profit to other sections of the Territory.

The average yield is 15 to 18 bushels per acre, the crop selling at $1 per bushel.

The castor-bean crop of the Territory was about 125,000 bushels last year and is estimated to reach 150,000 bushels this year.

PEANUTS.

Oklahoma farmers are learning each year of new crops with which to diversify and make more sure the profitable returns from farming. Some farmers who grew poor trying to raise corn alone have turned their attention to peanuts and found prosperity.

Much of the land of the Territory is well adapted to peanut raising, and the crop averages from 50 to 125 bushels per acre, selling at an average price of 65 cents per bushel. Most of the farmers grow in tracts of from 2 to 10 acres, but some are planting as much as 50 acres.

A peanut thrashing machine goes about in the district most largely devoted to growing the crop, which is in northern Lincoln County, and a machine for hulling the product and one for making peanut butter have been brought into the Territory this year.

A number of persons are growing the small Spanish peanut exclusively and furnishing them hulled to confectioners in the East.

The peanut crop of the Territory last year was about 40,000 bushels, but the acreage this year indicates a crop of 75,000 bushels.

MELONS.

Oklahoma is the home of the melon. Watermelons and cantaloupes produce enormously in the sandy bottom lands of the Territory and attain perfection in size and quality, and Oklahoma is now competing in the Eastern market with Rockyford, Colo., and other melon-raising points.

The Territory shipped about 400 cars of melons last year, and the crop this year will be fully as great.

Eastern produce and shipping houses are interesting themselves in melon growing in the Territory, and the acreage bids fair to be greatly increased another year.

Although melons are grown in every part of the Territory, Kay, Logan, Oklahoma, Canadian, and Lincoln counties grow the greatest number for shipment. Lawrie, in Logan County, and Bliss, in Kay County, are the largest shipping points, one man in Kay County having a field of 500 acres in melons.

The home consumption of melons is something enormous. Any time after July 15 until November a man can get a watermelon as large as he can carry for a nickel, and cantaloupes often go for 5 cents a dozen. Melons weighing over 100 pounds have been produced in the Territory, and 50 and 60 pound ones are very common.

POTATOES.

Oklahoma grows as fine early potatoes as are produced anywhere, and early in May new potatoes are being shipped from the Territory to Northern markets, many carloads being shipped each year in May and June.

The yield is large and early potato growing very profitable. Late potatoes do not do as well, and many varieties are deficient in keeping qualities.

The sweet-potato crop of the Territory is large and the yield prodigious. Specimens have been exhibited weighing as high as 12 pounds. Mr. Ellison, who lives about 2½ miles southwest of Guthrie, brought to the city three sweet potatoes which he had taken from one hill which weighed 15¾ pounds, an average of 5¼ pounds each.

Thomas Bassler produced a sweet potato last year which weighed 9½ pounds.

OTHER PRODUCTS.

Rye and barley both do well in Oklahoma and are grown quite extensively in some sections.

Hemp is grown with profit, and tobacco does well in many localities.

The sugar beet produces enormously, but is deficient in sugar-making qualities, though affording a valuable ration for stock.

Rutabagas, turnips, and kindred products do well. Garden vegetables of all kinds are grown profitably, and the early season affords an opportunity to ship to Northern markets.

Tomatoes produce famously, radishes and beets grow to mammoth proportions, and pease, beans, lettuce, etc., are plentiful everywhere.

Fodder crops are also a very valuable portion of the annual output of the Territory. In addition to the native and cultivated grasses, corn and Kaffir corn (mentioned elsewhere), sorghum, cowpeas, soy beans, and millet are grown very successfully in different parts of the Territory. Peanut vines also make a valuable fodder crop, and the experiment station at Stillwater is experimenting with several new fodder crops which promise well in Oklahoma.

FARM LANDS.

The farm lands of Oklahoma, like those of all sections of the country, vary in fertility, and these conditions, together with cultivation, improvements, and proximity to market, all combine to fix the selling value of farms in the Territory.

While many farms near the larger towns sell for from $25 to $50 per acre, good farms fairly well improved, from 4 to 10 miles from market, can be bought in any part of the Territory from $8 to $15 per acre, and in many sections much cheaper.

The large immigration into the Territory the past two years has caused a steady demand for lands, and considerable farm property is changing hands in every county. The increased demand and the absorption of all the desirable Government lands, which will take place within a year or two, will cause a steady increase of price of land in the Territory for the next few years.

In addition to the school and other public lands rented by the Territory, good land can be rented in almost every county for crop rentals of from one-third to two-fifths of corn, wheat, and oats and one-fourth of cotton and cash rent ranging from $1 to $3 per acre.

I give below a table showing the sales of farm lands in each county of the Territory for the months of May and June, 1900, and interesting data as to prices paid.

County.	Sales.	Total acres transferred.	Total price paid.	Lowest price per acre.	Highest price per acre.	Average price per acre.
Beaver	22	3,778	$21,350.00	$0.98	$18.12	$5.65
Blaine	11	1,440	11,200.00	2.50	16.25	7.77
Canadian	90	14,087	166,895.00	.62	26.25	11.84
Cleveland	31	3,975	55,322.50	1.56	32.50	13.87
Custer	19	2,837	22,500.00	1.25	13.75	9.62
Day	2	320	1,000.00	3.12	3.12	3.12
Dewey	4	640	3,094.14	3.12	6.84	4.83
Garfield	59	8,960	135,375.00	3.12	25.00	15.10
Grant	86	12,320	203,280.00	....	....	16.59
Greer	....	....	....	....	....	....
Kay	33	4,416.44	96,457.50	16.87	37.50	21.00
Kingfisher	86	10,582	88,338.00	.18	218.75	8.33
Lincoln	30	4,036	46,281.00	3.12	22.00	11.46
Logan	77	10,040	127,050.00	6.25	200.00	12.65
Noble	6	602	10,843.00	.50	25.00	18.00
Oklahoma	....	9,600	144,000.00	....	....	15.00
Pawnee	3	320.6	5,400.00	6.25	25.00	16.60
Payne	39	3,269	143.535.00	12.50	200.00	43.90
Pottawatomie	57	5,478	47,783.00	4.62	31.25	8.72
Roger Mills	13	2,080	6,549.00	1.87	7.84	3.14
Washita	18	2,921	13,761.00	2.81	8.00	4.70
Woods	23	3,551	19,224.50	.31	10.62	5.41
Woodward	20	3,180	10,311.20	.69	6.96	3.24

NOTE.—Lowest price paid per acre, $0.18. Highest price paid per acre, $218.75. Average price paid per acre, $11.83.

SOME INSTANCES OF PROSPERITY.

The Oklahoma farmer is the most prosperous man in the Territory, and in a general way the most prosperous of his class anywhere in the nation.

I could give the names of hundreds who came here with practically nothing a few years ago and to-day own productive farms and live in comfort, but mention only a few examples whose experiences I have gleaned from the press of the Territory.

T. C. Graham came to Alva, Woods County, in the northeastern part of the Territory, last spring from Cass County, Mo., and purchased the Sullivan farm, 8 miles southeast of that place; consideration, $1,050. Mr. Sullivan put in a header and 100 acres of wheat that was on the farm all for $1,050. Mr. Graham thrashed the wheat last week. It made 2,534 bushels. He built a large granary and put the most of it away to hold for 80 or 90 cents a bushel, but at the present price, 56 cents a bushel, the wheat is worth $1,419.04. At this rate his farm cost him nothing, and he gets $369.04 and the header for taking it.

Mr. W. S. Schwartz, who lives in southeastern Canadian County, is one of the most successful farmers in the county, yet he does not crowd any particular crop to the exclusion of others. Mr. Schwartz has already this year sold 2 tons of fine grapes, a large crop of early peaches, and is now marketing apples at $1 a bushel, and pears at $2.10. He has a big crop of grapes yet on hand which he will make into wine. Mr. Schwartz has 17 acres of cotton which will easily make a half bale, now worth $25, to the acre; 50 acres of corn which will yield 60 bushels to the acre, and stock enough to consume all of the corn. It would take a series of disasters to cripple such a farmer very seriously.

This morning Mr. Hubert M. Dorman left on a tour of Europe [says an Oklahoma City newspaper]. He will spend a couple of months abroad, and will also visit northern Africa and probably Palestine before he returns. Mr. Dorman is an illustration of what an Oklahoma farm will do for its owner. Eleven years ago he raced for an Oklahoma farm and got possession of a fine one in the valley 4 miles west of Oklahoma City. Other claimants bobbed up and the fight began. It was carried on in courts and out of courts; on the civil side and on the criminal side of the court. One suit followed another as fast as the court could turn them out for five years, when Dorman came out triumphant with a clear title to his farm and free from lawsuits. He went upon the farm with no property except the horse he rode, but between lawsuits he worked energetically to develop the place. Soon a good part of it was under plow and was yielding 30 bushels of wheat to the acre. The farm paid all of the expenses of the suit and a little more. With the suits out of the way, Mr. Dorman prospered to an exceptional degree, for that farm went right on making 30 bushels to the acre. He is now well to do, has a fine farm well stocked, and has a nice bank account after drawing out $500 for a visit to the Paris Exposition and a tour of Europe.

HORTICULTURE.

While horticulture is as yet in its infancy in the Territory, the excellence of the fruits produced here are already recognized in many markets, and Oklahoma is already looked upon as one of the successful fruit-producing sections of the country.

In spite of the fact that hundreds of thousands of worthless trees were palmed off on the settlers by irresponsible nurserymen the first few years, and the growing of fruits was at first a matter wholly of conjecture and experiment, the horticulturists of the Territory have in eleven years proved to the world that they could successfully raise a greater variety of fruits than most any other section of the country, that the quality of the fruit was second to none, and the yield abundant enough to insure most satisfactory profits.

OPINIONS FROM GROWERS.

The Territorial agricultural experiment station recently collected reports from a large number of fruit growers over the Territory as to most successful fruits, methods of growing, etc. I give below a brief summary of the preferences expressed by a majority of those reporting:

Apples.—Missouri Pippin, Ben Davis, Winesap, Jonathan, Arkansas Black, Maiden Blush, Mammoth Black Twig, Cooper's Early White and Yellow Transparent are given as the most desirable varieties for general planting.

Pears.—The reports indicate that pears have done well in almost every case where they have had good cultivation. The following varieties are considered the most desirable: Kieffer, Bartlett, Duchess, LeConte, and Garber.

Peaches.—This fruit has done well in Oklahoma, and the reports received show marked success with it. While a great many varieties are grown, the following were given the preference by the largest number of growers: Elberta, Alexander, Crawford's Late, Crawford's Early, Heath Cling, and Salaway.

Plums.—Reports were received from twenty-four orchards, representing ten counties. They place plums nearly if not quite at the head

GATHERING THE FRUITS OF AN OKLAHOMA FARM—APPLES, PEACHES, PLUMS, PEARS, GRAPES, AND MELONS.

of the list of fruits for Oklahoma. The following list contains the varieties thought most desirable: Wild Goose, Abundance, Burbank, Wickson, and Marianna.

Cherries.—The sweet varieties do not seem profitable in the western counties, but sour cherries are reported as having borne good crops on almost every kind of soil and location. The following varieties were recommended for general planting: Early Richmond, English Morello, Montmorency, Mayduke, Dyehouse, Gov. Wood, Ostheim, and Olivet.

Grapes.—This fruit has received much attention at the hands of fruit growers and the vineyards of the Territory have become one of its chief objects of pride. Quite detailed reports were received, and while many other varieties were mentioned, the following varieties were given the preference for general purposes: Concord, Catawaba, Niagara, Moore's Early, Worden, Moore's Diamond, Delaware, and Gœthe.

Blackberries.—Some of those reporting consider this the most paying fruit crop while others consider it a failure. Early Harvest, Kittatinny, and Snyder are the varieties preferred by most of those reporting.

Apricots.—No reports were received concerning this fruit. The varieties planted in the station orchard are given in the bulletin. A full crop of apricots is rarely obtained, the late spring frost killing most of the fruit.

Currants.—The Crandal currant is reported as having been grown with a fair degree of success.

Raspberries.—This crop is not regarded as a desirable one unless it is possible to help the natural supply of moisture by irrigation. The Turner and Cuthbert varieties have grown well, but have not yet produced a satisfactory crop here.

VARIETY TESTS OF FRUIT.

The experiment station makes the following report on variety tests:

Apples.—The following varieties set fruit in 1900: American Summer Pearmain, Arkansas Beauty, Arkansas Black, Bledsoe, Black Annette, Black Warrior, Carolina Watson, Chester's Early White, Cole's Quince, Cullen's Keeper, Dickinson, Duchess, Duchess of Oldenberg, Early Harvest, Early Pennock, Enormous, Fallawater, Fanny, Fenley, Flory's Bellflower, Gano, Hightop Sweet, Indian, Jewett's Best, Jones's Seedling, Kansas Queen, Kentucky Red Streak, Keswick, Codlin, King, Kittagaskee, Late Strawberry, Limbertwig, Little Romanite, Lowell, Maiden's Blush, Missouri Pippin, Moon, Nantahalle, Nickajack, Northern Sweet, Oldenberg, Orchard Red, Plum Cider, Pomeroy, Pyle's Red Winter, Red Winter Pearmain, Shockley, Stewart's Golden, Stump, Trenton's Early, Twenty Ounce, Wagner, Water.

The following varieties bloomed but set no fruit: Chattahoochee, Chenango, Strawberry, Early Ripe, Elkhorn, Huntsman, Ingram, Lauren's Greening, Minkler, Nero, Primate, Rebel, Rhode's Orange, Roman Stem, Tuscaloosa, Vandever, White Pippin, White Spanish Rennett.

Pears.—The following varieties set fruit in 1900: Bartlett, Kieffer, Clapp's Favorite. Duchess bloomed but set no fruit.

Cherries.—The following varieties set fruit in 1900: Belle de Choisey, Dyehouse, Early Richmond, English Morello, Montmorency, Olivet.

Plums.—The following varieties set fruit in 1900: Botan, Burbank, Emerson, Forest Garden, Golden, Beauty, Hattankio, Mrs. Clifford, Newton, Ogon, Pottawatomie, Weaver, Wolf's Free Stone, Wooten, and Yosebe. Lone Star bloomed but set no fruit.

Apricots.—The following varieties set fruit in 1900: Alexander, Early Golden, Gibbs, Golden Russian, J. L. Budd, Jackson, Luizet, and Oldbery.

Peaches.—The following varieties set fruit in 1900: Alexander, Alice Haupt, Arkansas Traveler, Barnes, Becquett's Cling, Becquett's Free, Bell's October, Bishop, Bonanza, Champion, Champion Mark, Chinese Cling, Cobbler, Crimson Beauty, Crothers, Druid Hill, Early Rivers, Early York, Eldred Cling, General Taylor, Haynes' Surprise, Heath Cling, Heath Free, J. B. Cling, June Rose, Mamie Ross, Miss Lolo, Mountain Rose, Mrs. Brett, Raisin, Ringgold, Salaway, Scruggs, Stump, Sylphide, Thurber, Topaz, Utah Cling, Walker, Wonderful, and Yellow St. John.

A MODEL FRUIT RANCH.

Frank Householder, living 8 miles west of Guthrie, has one of the model fruit ranches of the Territory, and successfully grows apples, peaches, pears, apricots, quinces, crab apples, cherries, plums, strawberries, and blackberries. He has 120 acres in orchard, 80 acres of which is just beginning to bear, and from this 80 acres he will this year have a net income of $1,500. He has grown as fine specimens of peaches, apples, plums, pears, and cherries as were ever shown by California or any other fruit section, and has never irrigated a single tree—depending entirely upon constant, clean cultivation of the entire orchard to produce the best results in growth and yield. Several of the photographs of fine Oklahoma fruits accompanying this report were taken in this orchard. A visit to his ranch during the bearing season will convince the most skeptical that Oklahoma is the fruit growers' mecca.

SOME SAMPLE PRODUCTS.

I give below several items clipped from local papers in different parts of the Territory as indicative of the results that are obtained in fruit growing by Oklahoma farmers:

Cloud Chief Beacon:

> Dick Roth broke his own record the first of the week on peaches. He brought in 10 peaches that weighed 5 pounds and 3 ounces. The smallest weighed strong 8 ounces and the largest almost 9½ ounces. They were exceedingly fine flavor and well ripened.

Ponca City Courier:

> Marcus L. Long brought this office a plum branch from his farm northwest of the city. The branch was 12 inches long, and on it were clustered 32 plums, none less than 1¼ inches in diameter. The fruit is free from worms or blemishes, and the trees bear so heavily that they can scarcely hold the burden. This plum branch holds the blue ribbon up to date.

Oklahoma City Times-Journal:

> John E. Carson, of 317 Noble avenue, brought to this office this morning 2 peaches that are the finest that have ever been shown in Oklahoma without doubt. They are clingstones, and the largest one measured 12 inches in circumference and the second 11½ inches. The largest one weighs 14 ounces and the smallest weighs over 13. If there has ever been any larger peaches than these they have yet to be heard from.

The rapid strides being made in the fruit industry in the Territory, the high quality of her fruit, the market afforded by large contiguous territory where fruit is not produced with profit indicates that Oklahoma will at an early date in the future be one of the leading fruit orchards of the world.

The geographical position of the Territory, being on the western border of the fruit belt of the United States, having a demand for its products from the principal markets of the nation, its mild climate and adaptability to growing a greater variety of fruits than elsewhere, are favorable to a highly profitable industry here.

A large percentage of sunshine, absence of damp, foggy atmosphere, and other favorable meteorological conditions are material factors in maturing and coloring our fruit that do not exist elsewhere, and furnish the rich color and fine flavor and superior keeping qualities that stimulate a demand and advance the price of the Oklahoma product.

PEACHES.

The peach crop of the Territory will reach one-half million bushels this year. All kinds of peaches do well in Oklahoma and the fruit attains a perfection of size and flavor here unknown in any other part of the nation. The famous Albertas, ripening early in August, are often found weighing 10 to 12 ounces and measuring 10, 11, and 12 inches in circumference.

Peaches ripen here in early June and continue until late November. Thousands of bushels were shipped out of the Territory during June, this year, and the shipment will continue until the close of the season.

The growth of the trees here is phenomenal, grafted trees bearing at four years and many seedlings at three years from the seed.

While some varieties are caught by late frosts owing to a tendency to extreme early blooming, the variety grown is so great and the situations so different that a fair crop is always assured. The Oklahoma peach is known in the leading markets of the country, has no equal, and has come to stay.

APPLES.

Contrary to general prediction, apple growing has proven a success in Oklahoma and the fruit from Oklahoma apple orchards compares favorably with that from any of the leading apple growing sections of the country. As fine specimens as have ever been produced are shown at the fairs and agricultural exhibits in the Territory.

It has taken considerable experimenting to find what varieties are best adapted to the soil and climate of the Territory, but orchards are coming into bearing all over the Territory, and hundreds of farmers will market from $100 to $1,000 worth of apples this year.

Up to this time home consumption has absorbed the entire apple crop of the Territory, but in a few years the Territory will be shipping largely to all parts of the country, and the Territory is destined in the not distant future to become one of the apple growing sections of the nation.

GRAPES.

> It appears that there is abundant material of best character, which will find in the intermediate location of Oklahoma, with its mild, healthful climate and congenial soil, its place for best development and profitable cultivation. Altogether Oklahoma occupies the ideal climate and contains the ideal soil for most successfully growing, for either table or wine, a greater range in varieties than any other equal area in the United States, save a similar region in central northern Texas, adjoining Oklahoma and materially forming a part of this superlatively fine grape belt.

The above is the opinion rendered by T. V. Munson, the noted grape expert, after thorough investigation and inspection of the vineyards of the Territory.

The time is rapidly coming when every farm in Oklahoma will have at least a small vineyard, for the rapid growth and abundant yield of the vine makes grape growing both a pleasant and profitable occupation in any part of the Territory.

Wild grapes of a number of varieties were found growing rankly almost everywhere in the wooded sections and along streams by the first settlers, and experience has shown that about all of the common varieties and most of the fancy grapes do remarkably well wherever planted and given a reasonable amount of care.

The fruit grows in immense bunches, which ripen evenly, with no stung grapes or mildew, and coming into maturity from July 15 to September 15, reach the markets ahead of the Northern grape and just after the Southern. The rapid growth of the grape here is almost phenomenal. Instances are known of vines making a growth of 30 feet or over in a single season, and many cases are reported of vines bearing liberally the second year from the cutting.

The average yield per vine is from 15 to 25 pounds, according to the variety. The local demand is fully supplied, large shipments are made, and hundreds of tons made into wine.

THE WINE INDUSTRY.

The abundant grape crop of the Territory has given rise to the manufacture of more or less wine in the sections of the Territory where large vineyards have been planted. The Oklahoma grape is naturally so sweet that wine made without sugar from Oklahoma grapes is almost as sweet as Northern wine made with sugar, and the wine made in Oklahoma matures a year earlier than that of the North.

This enables the Oklahoma wine maker to put an excellent wine on the market at much less cost than can be done in any other section of the country; consequently wine making is destined in the near future to be one of the principal industries of the Territory. Hundreds of grape growers are making wine in limited quantities, and there are three or four wine cellars of large capacity in the Territory.

BERRIES.

Oklahoma is the home of the strawberry and nowhere is this luscious fruit produced in better size or flavor. Many carloads of berries were shipped from Oklahoma the present season, and growers report a net profit of from $50 to $100 per acre. Specimens of strawberries measuring from 6 to 7 inches in circumference are very common.

Blackberries and dewberries produce prolifically in all parts of the Territory, and raspberries do well in shaded locations. Gooseberries are also successfully grown.

Many farmers have realized from $100 to $500 from comparatively small berry patches on their places.

OTHER FRUITS.

About all the leading varieties of plums do well in Oklahoma. Wild plums are found growing in all parts of the Territory, and the yield of the different native varieties of plums is large. Of the Japanese varieties, many produce remarkable crops, the trees being loaded to the ground at three and four years from the planting.

Cherries are slower in coming to bearing than many other fruits, but the growth is thrifty, the yield abundant, and the quality superior. Several fruit growers realized from $200 to $500 from their cherries alone this year.

Pears are hindered some by the blight, but when the trees come to bearing both standards and dwarfs do well. Hundreds of trees could

PICKING CHERRIES ON AN OKLAHOMA FRUIT RANCH.

be seen this year with limbs weighted to the ground with pears, every one of which was as large around as the body of the tree. Specimens measuring from 12 to 15 inches in circumference and weighing from 12 ounces to a pound are common.

Apricots do well in most sections of the Territory. German prunes, quinces, crab apples, and nectarines are grown with profit, and almond and fig trees are in bearing at several places.

LIVE STOCK.

No single factor will make more sure the permanent success of agriculture in Oklahoma than a steady gain in the number and quality of the live stock reared and matured here.

It is generally conceded that stock husbandry is the most profitable branch of farming, and that for agriculture to be put on a substantial and profitable basis in a given locality enough stock should be kept on every farm to consume the greater part of the products produced there. Still it is a fact that many thousands of dollars are lost every year in Oklahoma upon poor stock and through improper methods of feeding. This is not any more true here than in many other localities. Oklahoma has made rapid progress in the stock industry, but there is still much room for improvement. At the present time too much of the stock of Oklahoma is shipped out to be finished elsewhere. With her mild winters, and great variety of feeds in abundance, no other section excels her in the production of the finished article.

Here live stock need be kept housed but a few days in a year; the native pastures are good the year round; the great corn, cane, and kaffir fields, the cotton and other products afford cheap and abundant fattening foods, while the almost entire absence of the diseases which prove so troublesome in many localities make of this the mecca for the stock raiser.

I give below a table showing the live stock returned for taxation this year in each county of the Territory:

Number of live stock returned for assessment, 1900.

County.	Horses.	Mules and asses.	Cattle.	Sheep.	Swine.
Beaver	6,847	518	79,005	13,567	349
Blaine	5,705	790	13,855	1,946	4,119
Canadian	12,808	2,315	174,750	207	6,361
Cleveland	6,458	2,664	10,797	1,000	9,125
Custer	8,873	1,687	39,170	312	10,257
Day	2,208	428	25,202	10	938
Dewey	6,633	1,292	23,255	397	5,976
Garfield	12,807	2,584	26,809	1,021	12,289
Grant	12,886	2,124	25,826	141	13,440
Greer	20,325	3,669	71,888	11,670	7,596
Kay	12,530	1,959	22,915	495	15,000
Kingfisher	10,510	2,165	22,576	93	7,611
Lincoln	12,886	3,751	20,082	2,151	22,571
Logan	9,833	2,593	15,754	236	12,394
Noble	7,400	1,413	39,748	127	9,385
Oklahoma	8,616	2,322	12,971	336	11,520
Osage Reservation	6,021	531	70,360	....	6,017
Pawnee	7,605	1,543	14,458	663	8,852
Payne	11,154	2,850	19,195	452	22,794
Pottawatomie	10,228	3,718	20,744	525	12,832
Roger Mills	6,342	1,138	37,204	549	1,927
Washita	10,071	2,492	32,058	233	10,346
Woods	25,768	3,719	86,924	3,883	32,454
Woodward	8,589	1,260	84,988	3,460	1,278
Total	243,103	49,525	990,534	43,474	245,431

CATTLE.

Much of Oklahoma's wealth has always been in the herds of cattle which pastured upon the grasses and fattened upon the grains and fodder of the Territory.

By Territorial statute the board of regents of the agricultural and mechanical college are constituted a live stock sanitary commission and empowered to enforce sanitary laws looking toward the eradication of disease from the domestic animals of the Territory and protecting them from infection of every kind. This board, through its officers and inspectors, has endeavored during the past two years to specially protect the cattle of the Territory from the ravages of Texas or splenetic fever, and though greatly hampered because of insufficient appropriation they have succeeded so well that there have been very few cases of this disease among the cattle of the Territory, and the loss has been very light as compared with former years. This is a great benefit to cattlemen and farmers alike, and encourages all to improve their herds by breeding and the purchase of high-grade animals.

The Texas longhorn is everywhere giving way to graded or thoroughbred cattle, and even in the large pastures of the Far West the longhorn is in the minority.

The past year with its excellent prices and increasing demand has been one of unusual prosperity to cattle raisers and the future prospects are very bright.

The Oklahoma Live Stock Association, with headquarters at Woodward, Okla., is an organization of cattle owners with a very large membership all over the Territory, which is doing much to advance the interests of the cattle business. The association's membership now represents nearly $7,000,000 in cattle, and they maintain inspectors of their own in the principal markets.

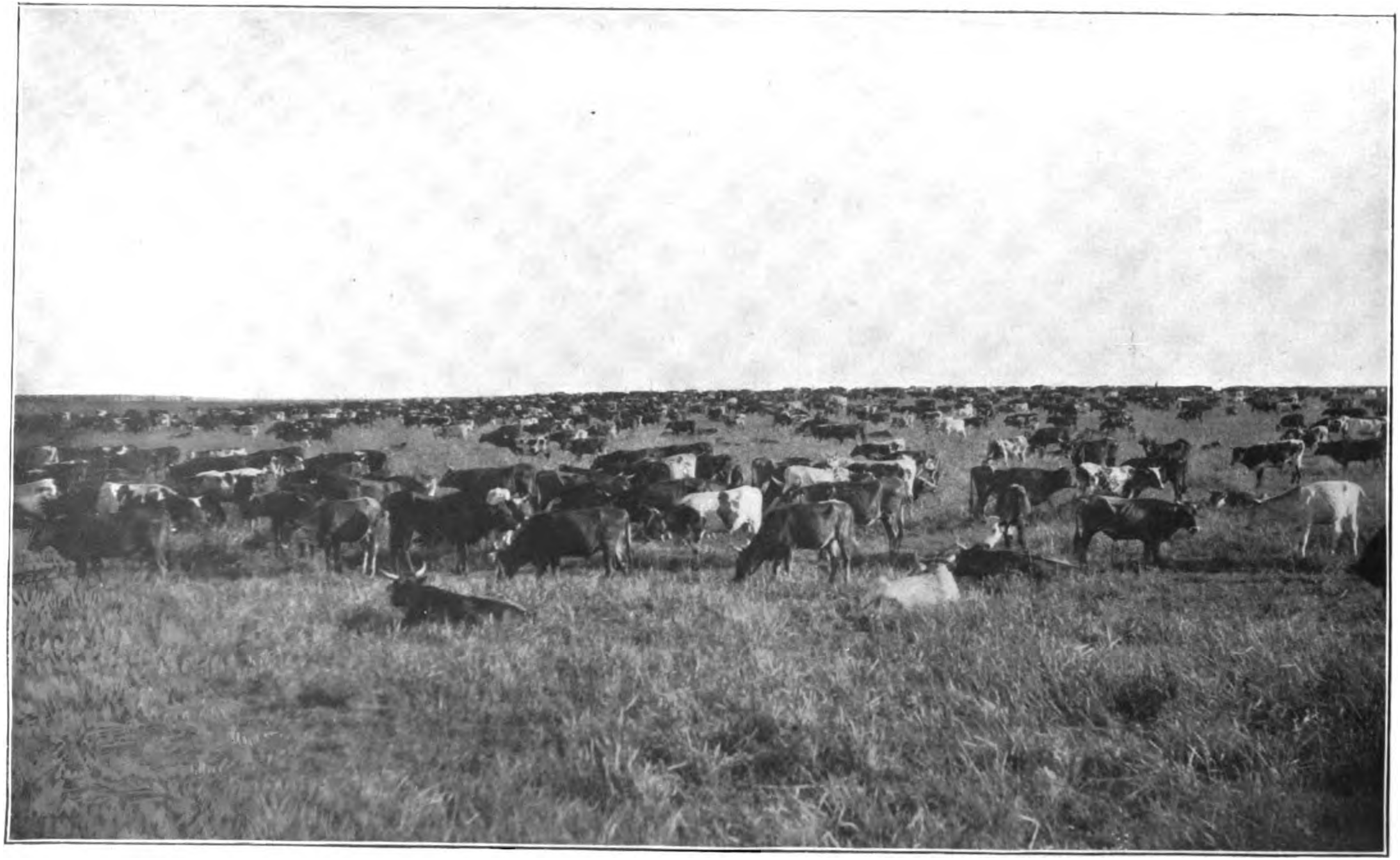
HORSES.

Insufficient attention to horse breeding is manifest in the character of many of the horses of the Territory. The mark of the broncho and Indian pony is much in evidence, but the increasing prices of the past year has induced many to begin improvement in breeding. The Oklahoma climate seems particularly adapted to the successful breeding of fine horses, and the Territory has already produced many track animals with excellent records.

Several large horse ranches have lately been started in the Territory. During the recent Boer war agents of the English Government purchased a number of carloads of horses and mules in Oklahoma.

SHEEP.

Sheep were unknown in most of Oklahoma until within the last few years. Now they are found in every county, and the flocks of the western counties are large and increasing. The dry mild winters of the Territory are very favorable to sheep, and capitalists are opening many large sheep ranches.



CATTLE PASTURING IN KIOWA AND COMANCHE RESERVATION.

POULTRY.

The poultry industry is well represented in the matter of breeders and poultry associations, but there has been a lack of interest among farmers generally in this important feature of farm products. This should not be so, for the climatic and other conditions are such that poultry may be cheaply reared and sold at a good profit. The local demand for poultry products is good and the supply insufficient at many times.

Within the past year the shipments of live and dressed poultry and eggs from the Territory has aggregated several thousands of dollars weekly, and will constantly increase as the farmers come to know the real value of the hen and pay more attention to the industry.

GRAIN INSPECTION.

The immense grain crops of the past three years made it imperative that some system of grain inspection be adopted, both for the protection of the producer and the dealer.

The law enacted by the legislature with this end in view has given general satisfaction, the Territorial grain inspector inspecting and grading the wheat at all elevators and shipping points and giving Oklahoma wheat a better standing in the great markets.

Grain elevators in the Territory.

Town.	Elevators.	Aggregate capacity.	Town.	Elevators.	Aggregate capacity.
		Bushels.			*Bushels.*
Alva	3	40,000	Newkirk	4	72,000
Blackwell	5	120,000	North Enid	2	30,000
Bliss	2	20,000	Norman	3	55,000
Cashion	2	20,000	Oklahoma	6	142,000
Deer Creek	2	20,000	Okarche	4	56,000
Dover	3	30,000	Orlando	1	9,000
Enid	4	80,000	Perry	4	125,000
El Reno	5	230,000	Perkins	1	10,000
Geary	2	20,000	Ponca City	4	110,000
Glencoe	1	10,000	Pond Creek	5	60,000
Guthrie	3	33,000	Reeding	2	20,000
Hennessey	7	75,000	Red Rock	1	12,000
Jefferson	2	30,000	Stillwater	1	10,000
Kingfisher	9	138,000	Waukomis	4	60,000
Kremlin	2	30,000	Weatherford	2	30,000
Medford	2	35,000	Yukon	5	75,000
Moore	2	20,000			
Mulhall	1	18,000	Total	107	1,860,000
Nardin	1	15,000			

IRRIGATION.

Owing to the abundant and well-distributed rainfall in the Territory comparatively little attention has been paid to irrigation, although many fruit and vegetable growers have put in plants, finding it very profitable to be able to turn water into garden or orchard at just the right time.

There are portions of the extreme western counties where irrigation would greatly increase the value of the lands and cause abundant crops to thrive on acres now of little use, and it is more than likely that more attention will be paid to the subject as the Territory becomes more populous and the demand for productive land increases.

The Commissioner of the General Land Office has granted permits to the following irrigation companies in Oklahoma to construct canals or ditches on public lands: Claremont Land and Irrigation Company, Danks & Dick Irrigating Ditch, Settlers' Milling Canal and Reservoir.

GEOLOGY AND NATURAL HISTORY.

By an act of the fifth session of the legislature of Oklahoma, a department of geology and natural history was established, with headquarters at the University of Oklahoma. The professor of biological and kindred subjects was made Territorial geologist and curator of the museum.

In accordance with this act, a party consisting of A. H. VanVleet, director and zoologist and photographer; C. N. Gould, geologist; Paul J. White, botanist, and Roy Hadsell, general assistant, was organized, and spent the early part of the present summer in field work.

The minerals present, the character of the surface rock, the nature of the soil, and even the kind of vegetation, are also characteristics of the different geological formations that to know the latter accurately is to predict, in general, the former.

The first work of the geologist, then, is to map the geological formations of his territory, and while the economic phase of the subject has received careful attention, the main object has been a study of the stratigraphy and physiography of the territory.

The eastern limit of Oklahoma marks, in general, the western limit of the carboniferous area. The present Oklahoma, not including the Kiowa and Comanche reservations, consists almost wholly of the so-called red beds, with thin deposits in places of the Cretaceous and Comanche.

The age of the red beds is still in dispute, although generally conceded to belong to the Permian. They were supposed to be entirely destitute of fossils, the only means by which the age of any formation may be determined, but the members of the geological survey have recently discovered local beds of well-preserved vertebrate remains and large areas of fossiliferous sandstone, which will settle this question, it is believed, definitely.

From its geological position and from the results of investigation, Oklahoma must be regarded as an agricultural and grazing country. It is somewhat remarkable that its political boundaries should so nearly coincide with its geological. In the Indian Territory on the east an abundance of limestone, coal, oil, and gas might be expected. In Oklahoma, except in the northeast portion, limestone is almost entirely absent, while the other products mentioned lie so far below the surface that their presence can be detected only by deep borings.

On the south, in the region of the Wichita Mountains, now really a part of Oklahoma, there is promise of various minerals in paying quantities, gold, copper, lead, and manganese ores being the ones generally mentioned in connection with this region. As it has been impossible, thus far, to make any systematic explorations in this district, the whole subject is somewhat problematical. This will be the next region for investigation by the survey.

The surface rock of Oklahoma, not including the reservations above mentioned, consists for the most part of sandstone, varying in texture from a coarse, rotten shale to a hard, fine-grained sandstone, and immense areas of gypsum.

This sandstone occurs in almost if not every county in the Territory and is used largely for foundations and similar building purposes. About 8 miles southwest of Watonga, capping the hills bordering the valley of the North Canadian, is a ledge of dolomite several feet in thickness, overlying a good quality of sandstone. The dolomite is of an excellent quality, and must eventually prove of great value as a building stone.

The two natural products most promising in Oklahoma are its gypsum and its salt.

The gypsum outcrops as great ledges, extending clear across the Territory. One very important series is exposed along the bluffs on the south side of the Cimarron from the Kansas line to the Glass Mountains, then bearing to the south gradually leaves the river, capping the bluffs which rise west of the Cimarron Valley.

In many places the soluble gypsum has yielded to the action of the running water, and immense caves, tunnels, natural bridges, and fantastic forms have resulted. Some of these caves harbor thousands of bats and the guano that has accumulated sells at a very high price as a fertilizer.

As far back as 1852 Marcy, in his explorations of the Red River, said that the discovery of gold in the Wichita Mountains would attract more attention, but that the discovery of the large gypsum beds would be worth more than the gold. The supply is practically inexhaustible, and with better means of transportation and the introduction of improved processes in the manufacture of plaster, cement, and fertilizers, must prove of great commercial value.

There are three principal salt areas: The Saline Reservation, about 25 miles east of Alva, in Woods County; the Salt Plains of the Cimarron, about 30 miles west of Alva, in Woodward County, and the plains of Salt Creek, about 10 miles north of Watonga, in Blaine County.

Each of these regions furnishes a local supply of salt, while at the Blaine County works several thousand pounds are manufactured daily. Were it not for the almost unlimited supply of salt in Kansas this industry would receive an immediate development on a large scale, and with means for transportation there is no reason why salt should not be manufactured here in competition with Kansas at a good profit.

On the Salt Plains of the Cimarron there are places where large springs bubble up through the sand, the water as clear as crystal and as salt as brine. Along the edges of the stream, formed by the union of these springs, are thick incrustations of salt, dazzling white in their purity, while on the grasses, sticks, or other foreign substances that may serve as nucleus, immense crystals of salt sparkle in the sunlight like diamonds.

From these springs thousands of gallons of water, saturated with salt, find their way into the Cimarron, carrying away enough salt to supply the whole Southwest. To pump this water into vats and evaporate it is the only process necessary to produce salt of an excellent quality. In addition, shallow wells sunk in the sand furnish an abundance of water highly charged with salt, and the cost of evaporation is practically the only one connected with the development of this industry.

Special attention has been paid to the native plants of the Territory, including the trees and shrubs. Large collections have been made in almost every county, and many plants found not described in the latest text-books of botany. Some of these will likely prove new to science.

The work of the survey is carried on at but slight expense to the Territory, as no one connected with it receives a salary. The plan is to secure specialists in the several lines of investigation who for the sake of investigation in their chosen lines are willing to devote their time to the work.

An extensive official report of the work of the survey will be prepared for transmission to the legislature at its next session.

MINES AND MINERALS.

So little real mining has been done in the Territory that the mineral deposits should more properly be classed under the head of undeveloped resources.

Copper is being profitably mined in the extreme western end of Beaver County, and other mineral deposits of value exist there. Coal is mined to a limited extent in Pawnee County and in the Osage Reservation, but veins of varying thickness and quality have been discovered also in Payne, Lincoln, Logan, Pottawatomie, and Garfield counties, and in the Kiowa and Comanche Reservation. It is in this latter reservation that the greatest mineral wealth of the Territory lies. There has long been a belief that gold and silver and other precious metals existed in large quantities in the Wichita Mountains, which occupy a considerable portion of the reservation, but a careful investigation convinces me that there is little ground for this belief, and if these metals are to be found there in paying quantities it will be in veins deep in the solid granite mountains.

Lewis and Clarke, in the report of their explorations in the southwest, tell of indications of cobalt, asphalt, zinc, iron, and copper in these mountains, and there is no doubt of the existence of these and other mineral deposits which were declared to exist there by the officers of various army expeditions made into that country during the first half of the century. This country will be open to settlement and subject to the United States mining laws within the coming year, however, and it will then soon be known whether the deposits of these metals are extensive enough to make a prosperous mining region.

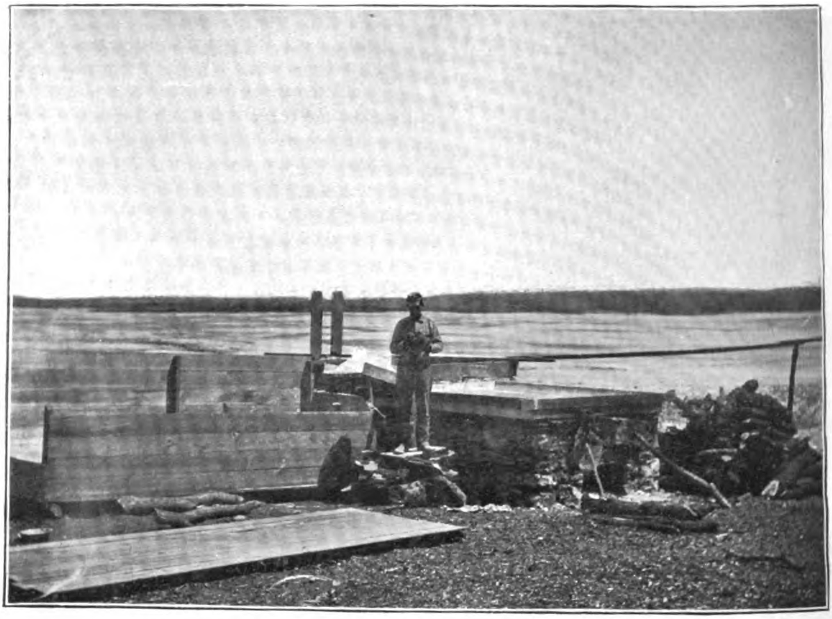
Asphaltum is to be found at various places in this reservation, several wells having penetrated great beds of it, and evidence of oil and gas are found on every side.

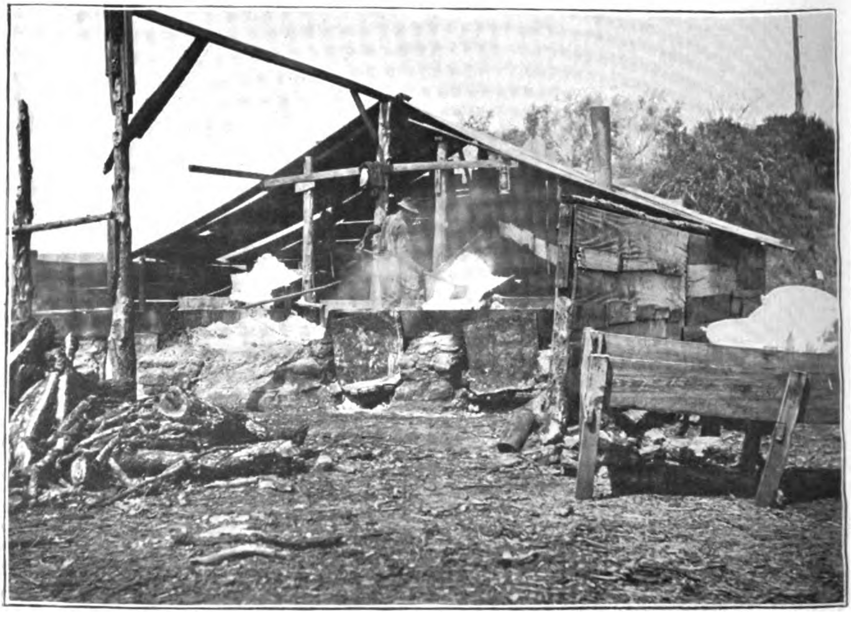
Excellent indications of zinc and lead are found in the Osage Reservation, in the Glass Mountains, in Woods County, and in several of the eastern counties of the Territory, and all of the minerals mentioned are found in various parts of the Indian Territory, the coal beds of that country being practically inexhaustible.

OIL AND GAS.

Both oil and gas have recently been found in wells near Granite, Greer County, just over the line from the Kiowa and Comanche Reservation and in close proximity to the Wichita Mountains, within a few weeks.

A good flow of oil was struck in a well put down at Pawhuska, in





Primitive Salt Factories in Blaine County, showing Salt Plains in Distance.

the northeastern part of the Territory two years ago, and an Eastern company is putting down a number of wells in the eastern part of the Osage Reservation. Oil is being piped from these wells in considerable quantity.

In Payne and Pawnee counties are several springs where the water is polluted with oil, and in the Chickasaw Nation and the Kiowa and Comanche reservations are oil springs and large deposits of asphaltum, which are but the residue of great fields of oil.

At one point near Fort Sill asphaltum oozes from the ground and liquid beds of it have been penetrated in digging wells.

Natural gas also escapes from a number of wells and springs in that section of the country. Paying wells are being put down in all parts of the Creek country just east of Oklahoma, and good indications have been found in a test well being put down at Guthrie.

There can be no doubt of the existence of both oil and gas in paying quantities in portions of the Territory.

UNDEVELOPED RESOURCES.

In addition to the mineral deposits of the Territory, the agricultural, horticultural, and live stock products of the Territory offer many inviting fields for the investment of capital and energy to great advantage, and a careful perusal of the matter under these subjects is invited.

There are great stone, cement, clay, and salt deposits in many parts of the Territory which offer special inducements for development. The quarries of Kay County turn out the finest building and paving stone in the West, while equally good stone is found in nearly every county, and the supply of fine granite in the Wichita Mountains is inexhaustible. In Kay, Kingfisher, Greer, Canadian, Lincoln, Woods, Woodward, Blaine, and other counties are beds of cement sufficient to supply the nation, and the gypsum of western Oklahoma is sufficient to furnish all the world with the finest quality of plaster.

The great salt marshes, the numerous salt springs, and streams will in time be the source of a great salt industry. In Woods and Grant counties are salt deposits where for miles stretch a glistening plain of white salt. In northern Blaine County is Salt Creek, whose source is the sweating from enormous deposits of rock salt and whose waters by simple evaporation yield half their weight in salt 99 per cent pure. Much salt is manufactured in a primitive way along this stream, but so strong is its flow that from thirty to fifty cars of salt daily pass off in its waters entering the Cimarron River and making its waters as salt as the ocean.

GUANO DEPOSITS.

In Woods and Woodward counties are a number of large caves filled with countless numbers of bats that have inhabited these vast recesses for centuries perhaps. Here are immense deposits of guano of great commercial value, and within the past year hundreds of tons have been taken out and hauled long distances to railway stations for shipment, some of it going as far as California.

These deposits will be the source of great revenue to that portion of the Territory.

MANUFACTURING.

The manufacturing industries of the Territory are as yet in their infancy, and the natural timidity of capital has prevented the building up of any large manufacturing interests in the Territory.

The flouring mills, enumerated elsewhere, form a considerable part of the manufacturing establishments of the Territory. There are about two hundred and fifty cotton gins and half a dozen cotton-seed oil mills (located at Guthrie, Oklahoma City, Stroud, Chandler, Norman, and Shawnee) dependent upon the cotton crop of the Territory. It seems reasonably certain that the magnitude of this crop will in the near future induce the location of cotton mills in the Territory. Cotton compresses at El Reno and Oklahoma City also employ a number of men.

The broom-corn crop of the Territory has encouraged the manufacture of brooms at several points, and a large broom factory is just starting at Guthrie. There are canning factories at several places, creameries at Guthrie, Oklahoma City, El Reno, Hennessey, Fairview, Manchester, and Stillwater, which can not supply half the demand for their product; cheese factories at Perkins and Orlando with a large business, and large ice and cold storage plants in operation at Perry, Ponca, Blackwell, Guthrie, Oklahoma City, Shawnee, Chandler, El Reno, Kingfisher, Enid, Stillwater, and Pawnee.

A large cement works near Okarche ships its products to all parts of the continent. Other cement works are located at Newkirk, and still others projected at Stroud, and in Greer and Blaine counties.

The stone quarries and kindred industries employ hundreds of hands, the leading ones being at Ponca City and Newkirk, while all of the leading towns have brick manufacturing plants.

The Choctaw Railway shops at Shawnee employ a large force of men, a large ballast works is in operation at Oklahoma City, and the Santa Fe is constructing shops and division structures at Guthrie. At Oklahoma City is located a large sash and door factory, and at Guthrie the Sturgis Wire Suspension Bridge Works.

Oklahoma City, El Reno, Shawnee, Enid, and Guthrie have foundries and planing mills, there are cigar and harness factories in all of the leading towns, the manufacture of wine from the abundant grape crop of the Territory gives employment to many, and there are numerous small industries scattered over the Territory, every town having several, and many new ventures are being projected.

Salt is manufactured somewhat extensively in Blaine and Greer counties, and the immense salt deposits in these and other sections offer an inviting field to capital.

The variety of agricultural and horticultural products of the Territory, the ready market for goods, the saving of transportation, the cheapness of fuel, and the rapid growth of the Territory in every line offers many opportunities and inducements for innumerable manufacturing industries that can best be established in a small way and grow with the country.

MILLING INTERESTS.

Oklahoma flour took first premium at the World's Fair at Chicago, and was awarded three gold and five silver medals at the Trans-Mississippi and International Exposition at Omaha.

Large shipments of flour are being regularly made from the Territory to Liverpool, Havana, South America, and Japan, and Oklahoma flour is becoming known in all of the leading markets of the world.

There are in the Territory at this time 43 flouring mills, with an aggregate daily capacity of 5,825 barrels, and mills are being constructed at a number of places in the Territory.

Flouring mills of Oklahoma.

Location.	Name of operator.	Capacity per day.
		Barrels.
Alva	Alva Milling Co	50
Blackwell	B. Walkentine	300
Blackburn	Blackburn Mills	100
Chandler	Lincoln Mill Co	50
Crescent City	Crescent Milling Co	40
Cushing	Betner & Allis	40
Edmond	Snyder Roller Mills	100
Do	Eagle Mills	70
El Reno	El Reno Mill and Elevator Co	400
Do	Canadian County Mill and Elevator Co	400
Enid	Farmers' Mill and Elevator Co	80
Do	Enid Mill and Elevator Co	300
Do	Garfield Milling Co	100
Fairview	Fairview Milling Co	50
Geary	Geary Mill and Elevator Co	150
Guthrie	Capital Roller Mills	125
Do	Model Roller Mills	75
Hennessey	R. H. Grimes	100
Kingfisher	Oklahoma Milling Co	300
Do	Kingfisher Milling Co	50
Lamont	Cross Bros	50
Lexington	Lexington Mill Co	40
Medford	Medford Mill and Elevator Co	150
Mulhall	Mulhall Roller Mills	80
Newkirk	Newkirk Milling Co	200
Norman	Norman Mill and Elevator Co	150
Do	Wingate Milling Co	75
Oklahoma City	Acme Milling Co	500
Do	Plansifter Milling Co	150
Do	Oklahoma City Mill and Elevator Co	200
Pawnee	Pawnee Milling Co	100
Pawhuska	W. S. Mathers & Co	100
Perry	Perry Mill Co	250
Pond Creek	Pond Creek Mill and Elevator Co	125
Ponca City	Ponca Mill and Elevator Co	200
Shawnee	Shawnee Mill and Grain Co	100
Stillwater	Stillwater Mill Co	50
Do	Thomas & Plummer	100
Stroud	Stroud Mills	25
Yukon	Yukon Mill and Grain Co	100
Waukomis	Waukomis Mill Co	100
Weatherford	Weatherford Mill Co	150
Total aggregate capacity.		5,825

FUEL AND LUMBER.

The Territory is well supplied with both fuel and lumber at reasonable rates. Coal ranges in price from $2 to $8 per ton, according to locality and quality, and good oak wood averages about $3 per cord, with elm and cottonwood at $2.50.

Our native timber includes oak, elm, walnut, pecan, hickory, black gum, cottonwood, ash, hackberry, cedar, etc., in abundance, and much lumber is cut from them, especially in the eastern tier of counties, which are most thickly timbered.

Coal is being mined at several points in the Territory, and the development of other fields will tend to keep the price of fuel reasonable in all sections.

While the lumber and coal interests of the Territory are not so extensive as those of many States, the proximity of the great coal fields of the Indian Territory and Arkansas and the great pine and cypress forests of Arkansas and Louisiana and Texas insures cheap fuel and lumber to the Territory for generations to come.

LABOR SUPPLY.

People willing to work are never idle for any length of time in Oklahoma, as the demand for labor is always equal and often in excess of the supply. Farm laborers are in demand at all times and there is often a shortage of help during harvest and cotton picking. The supply of capable domestics is never equal to the demand, and good wages are paid.

The manufacturing industries of the cities are each year offering employment to increasing numbers, and the large amount of building and railway construction the present year has created a demand that could not be supplied except by the bringing in of hundreds of laborers. The wages paid are generally liberal and up to the average of the States.

PUBLIC HEALTH.

The first Territorial legislature established a Territorial board of health, composed of the superintendent of public instruction, ex officio, president; superintendent of public health, ex officio, secretary, and a vice-president. The last two named members of the board are appointed by the governor of the Territory.

This board is empowered to make any needful rules and regulations affecting the sanitary condition of the Territory; also for the prevention and cure and the spreading of any contagious diseases. The members of the board receive no salary excepting the secretary, who receives $500 per year. Nearly all of the work pertaining to public health, therefore, must be done by the superintendent of public health.

Since this act went into effect three physicians have served as superintendent of public health. All of them have been men of marked ability and recognized as leaders in their profession. Their work has been thoroughly and conscientiously done. Although the duties of the present board have been three or four times what they were when the Territory was first organized, owing to the increase of population, building of cities, immigration, etc., yet but little more money was appropriated by the last legislature for the enforcement of the regulations of the board than was the case the first year. Hence the work of the board has been seriously crippled during the last two years, owing to the inadequate appropriation of the last legislature.

Smallpox was brought into the Territory from both Kansas and the Indian Territory in the autumn of 1898, and during the years 1899 and 1900 extended to all parts of the Territory. Owing to the lack of necessary funds to handle it, it was with difficulty controlled, quarantined and stamped out. A large amount of work was done by the various health officers gratuitously. If this had not been the case the ravages of the disease would have been more severe than has been the case.

County boards of health are composed of the county superintendent of schools, ex officio president, and two physicians appointed by the Territorial board of health. For the first time in the history of the Territory every county has a good board of health with a full complement of members. These boards have done splendid work during the past biennial period in keeping their counties and towns in a sanitary condition.

CLIMATE.

The climate of Oklahoma is very favorable to all respiratory diseases. Asthma, bronchial troubles, and consumption all receive benefit from a residence here. This is due to a great extent to the large number of days of sunshine and dry, warm atmosphere.

The influence of damp weather upon man is remarkable. If he has any physical weakness it is only made more pronounced where dampness prevails. Where there is lack of sunshine the suppressed cough begins again, the old rheumatism comes back, and even the brain itself is affected and becomes languid. Not only is damp weather favorable to these conditions, but as well to all diseases dependent upon germ life. Our warm, dry air takes the place of the fire, friction, flannels, and stimulants that are used as medicinal agents in damp climates to produce just such results as here occur from our atmospheric condition.

MEDICAL PRACTICE.

The statutes of Oklahoma prohibit any person from practicing medicine in any of its departments (under the head of which comes osteopathy, magnetic healing, midwifery, Christian science, and other allied branches of so-called arts of healing) without having first secured a certificate giving them the legal right to practice. These certificates are secured in two ways. Graduates of medical colleges can, upon payment of a fee of $2 and the presentation of their diplomas, together with a certificate signed by two reputable citizens stating that they are of good moral character, receive from the superintendent of public health the necessary certificate.

Persons not holding a diploma and desiring to secure a certificate must go before the Territorial medical examining board and be examined, and if such examination is satisfactory they will receive a certificate conferring the same rights as do certificates issued by the superintendent of public health. Eleven hundred and twenty-five physicians have been licensed to practice in the Territory during the ten years of the existence of the medical board, and the secretary estimates that about 600 of these are now practicing in the Territory.

PHARMACY.

There are in the Territory at this time 220 registered pharmacists, and by special provision of the Territorial statutes 240 general merchants, located 10 miles or more from a registered pharmacist, have been granted permits to sell certain common drugs and patent medicines under regulations of the Territorial board of pharmacy.

The pharmaceutical laws are all well enforced and the people well protected from incompetent pharmacists or inferior drugs.

DENTISTRY.

There are 84 licensed dentists in the Territory, 3 of them women.

The laws regulating the profession are all well enforced. No persons are allowed to practice unless they are graduates of a reputable college or have passed a thorough examination before the Territorial board of dental examiners.

THE PRESS OF THE TERRITORY.

No part of the nation owes more to the press than does Oklahoma, and the people of the Territory show their appreciation of this by liberal patronage both of their home papers and the metropolitan papers which reach the Territory.

The newspapers of Oklahoma will compare favorably with others of any State in the Union, and there are a number of very creditable class, special and literary publications, the total list of the Territorial publications now embracing 9 dailies, 139 weeklies, 18 monthlies, 4 semimonthlies, and 2 quarterlies, as follows:

Newspapers of Oklahoma.

DAILY.

Guthrie: Oklahoma State Capital, Leader.
Oklahoma City: Times-Journal, Oklahoman.
El Reno: Supper Bell.
Enid: Wave.
Shawnee: Democrat.
Perry: Enterprise-Times.
Ponca: Courier.

WEEKLY.

Beaver County: Beaver—Herald; Hardesty—Herald; Kenton—Cimarron News.

Blaine County: Watonga—Republican, Sentinel; Geary—Bulletin, Republican; Okeene—Eagle.

Canadian County: El Reno—News, Democrat, Globe, Bell, Volksblatt (German); Okarche—Times; Yukon—Sun.

Cleveland County: Norman—Transcript, Democrat-Topic, Voice; Lexington—Leader, "Y'Alls."

Custer County: Arapahoe—Clarion, Bee, News; Weatherford—Democrat, Republican, Chronicle, Oklahoma Vorwaerts (German); Independence—Courier.

Day County: Grande—Day County Tribune.

Dewey County: Taloga—Advocate, Times.

Garfield County: Enid—Sun-Eagle, Democrat, Tribune, Wave; Waukomis—Hornet, World; Garber—Sentinel.

Grant County: Pond Creek—Vidette, News; Jefferson—Rustler; Medford—Patriot, Star; Wakita—Herald; Manchester—Journal; Renfrow—Tribune.

Greer County: Mangum—Monitor, Star, Sun; Altus—Plaindealer, News; Granite—Enterprise.

Kay County: Newkirk—Republican-News-Journal, Democrat, Populist, Herald; Ponca—Courier, Democrat; Tonkawa—Salt Fork Valley News; Blackwell—Times-Record, Sun; Nardin—Star; Braman—Star.

Kingfisher County: Kingfisher—Free-Press, Times, Reformer, Pioneer; Hennessey—Clipper, Press-Democrat; Kiel—Press.

Lincoln County: Chandler—Democrat and Telegram, News, Publicist; Stroud—Messenger, Star; Wellston—News; Carney—Enterprise.

Logan County: Guthrie—State Capital, Leader, Register, Oklahoma Christian, Guide, Southwest World; Mulhall—Enterprise; Orlando—Herald; Langston—Herald; McKinley—Constitution; Coyle—Clipper.

Noble County: Perry—Sentinel, Enterprise-Times, Republican; Billings—Red Rock Valley News.

Oklahoma County: Oklahoma City—Times-Journal, Oklahoman, Champion, India-Okla Methodist, Farmer, Echo (German); Edmond—Sun; Luther—Register.

Pawnee County: Pawnee—Times-Democrat, Dispatch, Courier; Cleveland—Triangle; Ralston—Free Press; Jennings—News.

Payne County: Stillwater—Gazette, Populist, Democrat; Perkins—Journal; Cushing—Herald; Glencoe—Mirror; Ripley—Times, News.

Pottawatomie County: Tecumseh—Republican, Democrat; Shawnee—Democrat, Quill; McLoud—Sunbeam, Herald.

Roger Mills County: Cheyenne—Sunbeam; Berlin—Venture.

Washita County: Cloud Chief—Herald-Sentinel, Beacon; Cordell—Messenger; Mountain View—Progress.

Woods County: Alva—Courier, Pioneer, Review; Cleo—Chieftain; Carwile—Journal; Lahoma—Sun; Augusta—News, Free Homes, Headlight; Byron—Republican.

Woodward County: Woodward—News, Bulletin.

Osage Reservation: Pawhuska—Osage Journal.

SEMIMONTHLY.

Woodward—Live Stock Inspector.

Norman—University Umpire, University News Letter.

Perry—The Florist.

MONTHLY.

Guthrie—Oklahoma Churchman, Oklahoma Medical Journal, Practical Pointers, Sawyer's Review, Anti-Saloon Herald.

Oklahoma City—Home, Field and Forum, Southwest Woodman, Oklahoma School Herald, McMaster's Magazine.

Stillwater—Oklahoma Workman, College Paper.

Ponca City—I. O. O. F. Journal.

Perry—Oklahoma Sunday School Worker, Kiowa Chief.

Woodward—Western School Journal.

Mangum—Greer County School Journal.

Chandler—School Journal.

Tecumseh—Pottawatomie County School Journal.

QUARTERLY.

El Reno—School Visitor.

Cheyenne—Sign in the Last Days.

The very first day of the Territory's settlement saw a daily newspaper published at Guthrie, and this paper has grown from its very small beginnings on that first day of Oklahoma's history to a metropolitan daily with full Associated Press dispatches, lineotypes, and Webb perfecting presses. The first daily was followed in rapid succession by other dailies and many weeklies, half a dozen or more towns having newspapers before the close of the first week.

So it has been at each successive expansion of the Territory; every town or hamlet has its paper, and the number of publications is greater in proportion to the population than in three-fourths of the States of the Union.

TERRITORIAL LIBRARY.

The Territorial library has upon its shelves over 6,000 volumes. This library was created by legislative enactment in 1893, and has been built up and maintained wholly at the expense of the Territory, never having received the Congressional aid which has been extended to the libraries of most of the States.

While the act creating the library contemplated a general library, the directors have seen fit to limit it to a law library.

IMMIGRATION.

All of the people of the nation who are dissatisfied with their location or surroundings seem to be looking toward Oklahoma as the one place above all others which offers the panacea for all the ills of their present circumstances.

The mail of the executive office is daily loaded down with inquiries about the Territory and requests for information; home-seekers' excursions bring whole train loads of people anxious to better their conditions, and scarcely a train enters the Territory without an appreciable percentage of the passengers being persons in search of home or business opportunities. The white-topped prairie schooner, too, with its burden of a family and their belongings is an everyday sight coming into the Territory from all the points of the compass. And so pleasing is the aspect of the Territory, and so prosperous the condition of the people, that almost without exception those who come to see decide to stay and make Oklahoma their permanent home. I believe that fully 50,000 people have come into the Territory from the different States of the Union during the past year, and that the number will be much larger the coming year. Oklahoma has room and opportunities for all and extends an invitation to those of every station in life who desire to better their condition.

The class of immigrants who come to the Territory are of the best, well-to-do farmers seeking escape from the rigors of the North or the oppressive heat of the South, young men starting out to make a place in life, energetic business men seeking new locations, artisans and mechanics seeking homes and opportunities for their children, and all have become earnest, loyal citizens of the Territory, united in an earnest endeavor to rear here a commonwealth of which all posterity shall be proud.

THE COURTS.

The work of the courts in the Territory has been expeditiously transacted the past year. In many counties the dockets were cleared on old cases which had been dragging along for years, and in the criminal courts judges and juries have been disposed to mete out prompt punishment to all guilty persons brought to trial.

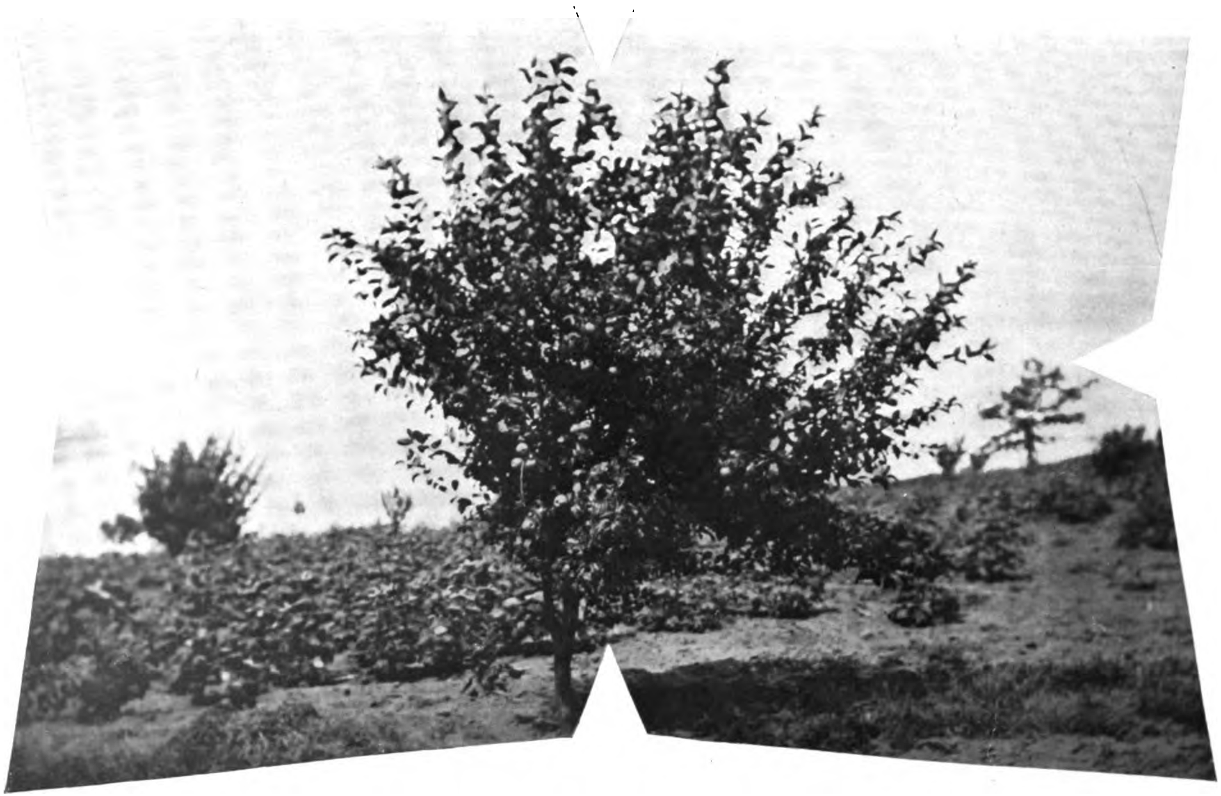
From information furnished by the several clerks of the courts, I give below a statement showing the business transacted in the supreme court and in each of the district courts of the territory:

SUPREME COURT.

Number of cases docketed during the year	117
Number of cases disposed of	73
Total number of cases on docket June 30, 1900	53

DISTRICT COURTS.

First district:	
Number of cases docketed during the year	824
Number of cases disposed of	535
Total number of cases on docket June 30, 1900	542
Second district:	
Number of cases docketed during the year	755
Number of cases disposed of	649
Total number of cases on docket June 30, 1900	335



Four-year-old Lincoln County Apple Tree loaded with Fruit.

Third district:	
Number of cases docketed during the year	751
Number of cases disposed of	563
Total number of cases on docket June 30, 1900	811
Fourth district:	
Number of cases docketed during the year	924
Number of cases disposed of	731
Total number of cases on docket June 30, 1900	527
Fifth district:	
Number of cases disposed of	610

Our supreme court is composed of the chief justice and four associate justices, each of whom sits as a trial judge, with original jurisdiction of all cases of civil and criminal litigation arising in the district to which he is assigned. This is not satisfactory to the bar nor to the people generally. A separate court of appeals or supreme court should be provided, and in view of the fact that a like condition of judiciary organization prevails in the Indian Territory, adjoining Oklahoma, I am confirmed in the opinion of the wisdom of the suggestion made on page 38 of my report for the year 1897, to wit:

That in view of the logical and desirable union of the two Territories as one State, which I believe to be our ultimate destiny, the laws of Oklahoma should be made applicable to affairs in the Indian Territory, and a supreme court be created having appellate jurisdiction of all cases arising in both Territories.

CRIMES AND PUNISHMENT.

Oklahoma has not yet established a penitentiary of her own, and the convicts are cared for in the Kansas State penitentiary at Lansing, Kans., under contract, the Territory paying 35 cents per day for each convict, and the Territorial prisoners being treated in every way as are those of Kansas.

The expense to the Territory for the year has been:

Transportation of convicts	$4,589.73
Care and keeping	24,770.80
Total	29,360.33

This is an increase of $5,582.03 over the preceding year.

There are in the penitentiary at this time 234 convicts, a net increase of 65 during the past year. The total number of prisoners received at the prison during the year was 141; the number discharged 75, of whom 26 were pardoned; 1 escaped, 1 died, and 1 was remanded for new trial.

While the net increase of prisoners has been greater than during any previous year in the history of the Territory, I believe it to be due to a more rigid enforcement of the laws rather than to any real increase of crime beyond that naturally resulting from the rapid increase in population.

Oklahoma has 1 convict to each 1,800 population, Ohio the same; Kansas 1 to each 1,600, Indiana 1 to each 1,250, Arizona 1 to each 450 of population.

The number of prisoners from each county is as follows:

County.	Number of convicts.	County.	Number of convicts.
Beaver	....	Logan	40
Blaine	6	Noble	10
Canadian	14	Oklahoma	17
Cleveland	9	Pawnee	8
Custer	....	Payne	25
Day	2	Pottawatomie	8
Dewey	6	Roger Mills	1
Garfield	14	Washita	....
Grant	7	Woods	3
Greer	3	Woodward	5
Kay	21	Total	234
Kingfisher	12		
Lincoln	28		

The following table shows the different crimes for which the prisoners were sentenced, the number for each crime, the length of sentences, and the average sentence:

	Number of convictions.	Term of sentence.																	Average sentence (years).
		Life.	50 years.	30 years.	25 years.	20 years.	15 years.	12 years.	10 years.	8 years.	7 years.	6 years.	5 years.	4 years.	3 years.	2 years.	1 year.	Less than 1 year.	
Murder	20	19	1																(a)
Manslaughter	14			1	1	1	1	3	4			1		2					13
Assault to kill	5								1		1	1	1	1					6
Rape	4					1							2			1			8
Assault to rape	2														2				3
Homicide	1													1					4
Highway robbery	10	3							6						1				(a)
Incest	1											1							6
Perjury	2												2						5
Forgery	7											1	1		1	2	2		3
Burglary	56										3		9	2	12	27	3		3
Felonious assault	2												1			1			3
Bigamy	1														1				3
Larceny	90									1	3	4	9	9	22	19	28		3
Fraud	9										1					1	7		2
Assault with weapon	2															1	1		1
Receiving stolen property	1														1				3
Arson	2															2			2
Assault	2														1		1		2½
Adultery	1																	1	b6
Embezzlement	2													1			1		2½
Total	234	22	1	1	1	2	1	3	11	1	8	8	25	16	41	54	38	1	

a Can not be averaged because of life sentence.

b Months.

YOUTHFUL CRIMINALS.

There is one serious defect in the criminal and police laws of the Territory, which compels the judges of the courts to sentence very young transgressors to the penitentiary, there to consort with and learn the ways of hardened criminals. This is really a crime against justice, and in some cases judges and juries have ignored the law and allowed very youthful offenders to go unpunished rather than place them where the tendency would be to turn them to whole lives of crime.

It is to be hoped that the coming legislature will not, like the last, ignore this question, but will provide for the establishment of some sort of a reformatory institution within the Territory, as it has been found impracticable and impossible to contract with any near by State for the care of the incorrigible youth of the Territory.

PUBLIC BUILDINGS.

The magnificent educational structures, fully described under the head of higher institutions of learning, are the only public buildings owned by the Territory.

The general disposition has been to defer the location and erection of a capitol, penitentiary, asylum, etc., until the definite boundaries of the future State of Oklahoma are fixed.

When the Cherokee Strip was opened to settlement section 33 in each Congressional township was reserved for public-building purposes, and this land has since been leased under authority of the Interior Department, the proceeds up to July 1, 1900, aggregating $98,072.18, which is held in the Territorial treasury as a public-building fund and available whenever the legislature locates and provides for the erection of such buildings.

This fund will from this time on increase about $25,000 a year from the leasing receipts, but there is no provision for the investment of the fund until such time as it is needed.

CITIES.

The Territorial statutes provide that whenever any city shall attain a population of 2,500 and a satisfactory showing of the same shall be made to the governor, he shall, upon petition of a majority of the voters, issue a proclamation declaring it a city of the first class.

There are now thirteen cities of the first class in the Territory—Guthrie, Oklahoma City, Shawnee, El Reno, Kingfisher, Enid, Pond Creek, Perry, Weatherford, Stillwater, Ponca City, Blackwell, and Newkirk, the last two having attained this distinction during the year.

The cities of the Territory are well governed, have police and fire protection, waterworks, electric lights, excellent schools, good sidewalks and streets, and the population of each is increasing very rapidly. The tax rates are not excessive, municipal business is conducted largely on a cash basis, and manufacturing and industrial enterprises of all kinds are being fostered and encouraged.

Several of the cities have public parks and others are establishing them; streets are being planted to trees, public buildings are being erected, and the comfort, enjoyment, and health of the people are being well looked after.

Assessment of town and city lots in Oklahoma, 1900.

County.	Number.	Average value.	Total assessment.
Beaver	2,448	$2.10	$5,131
Blaine	3,986	12.08	47,938
Canadian	6,079	60.73	369,188
Cleveland	9,219	29.21	269,255
Custer	5,523	19.87	109,764
Day	90	22.02	1,982
Dewey	1,743	8.50	14,797
Garfield	6,508	45.13	293,819
Grant	3,816	29.53	113,658
Greer	1,283	34.60	44,397
Kay	15,068	34.71	522,886
Kingfisher	6,034	47.76	288,156
Lincoln	6,920	28.61	197,980
Logan	13,386	83.00	1,111,607
Noble	4,231	63.83	270,102
Oklahoma	8,278	152.51	1,262,465

Assessment of town and city lots in Oklahoma, 1900—Continued.

County.	Number.	Average value.	Total assessment.
Pawnee	2,499	$50.68	$126,582
Payne	....	....	285,231
Pottawatomie	10,783	37.90	408,636
Roger Mills	1,154	12.70	14,654
Washita	1,712	12.95	22,131
Woods	3,598	32.67	117,537
Woodward	....	....	98,159
Total	114,353	32.81	5,996,004

INDUSTRIAL AND COMMERCIAL PROGRESS OF CITIES.

Oklahoma towns and cities are all progressive and enterprising communities, striving to build up themselves and the country around them.

From communications received from the mayors and commercial clubs of twenty-two of the leading towns of the Territory I have compiled the following interesting data upon the subjects of manufacturing, wholesaling, building, and public improvements:

Town.	Manufacturing establishments.		Wholesale houses.		Business buildings in course of erection.	Residences in course of erection.
	Number.	Hands employed.	Number.	Hands employed.		
Alva	3	7	4	11	2	14
Blackwell	19	152	9	53	9	41
Chandler	2	65	....	....	....	10
El Reno	8	85	3	30	5	30
Enid	20	98	10	43	10	38
Guthrie	27	225	21	122	8	35
Hennessey	1	10	....	....	1	10
Kingfisher	9	65	5	40	3	10
Medford	5	19	2	15	1	12
Newkirk	11	45	....	....	4	8
Norman	8	20	....	....	2	5
Oklahoma City	23	600	28	360	20	150
Pawnee	8	15	3	12	6	20
Perry	7	60	2	10	1	30
Ponca	1	5	....	....	5	3
Pond Creek	2	85	....	....	3	6
Shawnee	5	200	2	8	9	10
Stillwater	6	50	2	8	9	27
Stroud	1	20	....	....	3	5
Tecumseh	1	6	1	6	12	10
Weatherford	2	20	1	5	....	6
Woodward	2	6	....	....	2	6
Total	161	1,818	88	723	115	486

PUBLIC IMPROVEMENTS MADE DURING THE PAST YEAR.

Alva: Two churches, addition to public-school building, $6,000 dormitory for college students.

Blackwell: City jail, waterworks, fire-alarm system.

Chandler: Built oil mill and a press-brick plant.

El Reno: Complete sewer system at cost of $15,000 and 4 miles of sidewalk.

Enid: Waterworks, $40,000; sewers, $900.

Guthrie: Opera house, Masonic temple, 7,700 feet of brick and stone walk.

Medford: One school building.

Newkirk: Macadamizing and curbing streets, stone-flagging sidewalks, addition to court-house.

Norman: Addition to waterworks.

Oklahoma City: Curbed and guttered streets, $50,000 hotel, schoolhouse.

Pawnee: Schoolhouse and jail.

Perry: Catholic college.
Ponca: Waterworks, $27,000; public-school building, $4,000.
Shawnee: Choctaw, Oklahoma and Gulf Railroad began southern extension.
Stillwater: New college building.
Stroud: Schoolhouse, $4,000.
Weatherford: $7,000 schoolhouse, $15,000 mill.
Woodward: System of waterworks to supply the railway shops, depot, etc.

PUBLIC IMPROVEMENTS IN PROGRESS.

Alva: City waterworks.

Blackwell: Guttering and curbing six blocks (streets and alleys), Baptist college, opera house.

Elreno: Opera house, extension of waterworks and telephone lines.

Guthrie: Sewerage system, second telephone system, 9 miles of railroad side tracks, division yards.

Oklahoma City: $30,000 public-library building, $30,000 city hall, a number of miles of sewer and water-main extensions.

Pawnee: Schoolhouse.

Perry: County jail, street grading, and bridges.

Stillwater: Schoolhouse, waterworks, electric-light plant.

Tecumseh: Extension Choctaw, Oklahoma and Gulf Railroad, one packing house.

Weatherford: Waterworks plant costing $21,000, telephone system.

Woodward: Public hall and lodge building.

POSTAL FACILITIES.

From the first Oklahoma has enjoyed postal facilities superior to those of any new country.

Owing to the intelligence of the people of the Territory and the very small per cent of illiteracy the amount of mail received and sent out has been unusually large, and caused the Post-Office Department to constantly extend the service in every part of the Territory. The railway mail routes are being constantly added to by the construction of new lines of railway and star routes reach to the most remote corners of the Territory.

There are in the Territory at this time nearly 600 post-offices. Guthrie and Oklahoma city have had free mail delivery for years, and El Reno, Enid, and Perry will be accorded free delivery within the next sixty days.

The Post-Office Department will, I am informed, inaugurate experimental rural mail delivery in the Territory during the year. One route has already been located to make a circuit from Hennessey east, and another will be located at some other point. This will be a great convenience and benefit to the farming community, and it is hoped the system will be rapidly extended to all parts of the Territory.

COUNTIES.

Like all new countries the affairs of most of the counties of the Territory were mismanaged at first, and this, together with the necessity of carrying on the affairs of the county a year or more before any tax could be collected, the small amount of taxable property and the necessity of purchasing all supplies and records at once, furnishing quarters, etc., combined to pile up considerable debt in each county.

These debts have all been funded into long-time low-interest bonds, the counties all conducted on a cash basis which, with the better management and increase of taxable wealth, is resulting in an appreciable reduction of the tax rate of every county in the Territory each year.

A majority of the counties have built good court-houses and jails, have fair roads, and most of the streams bridged, and are constantly making many permanent improvements.

I give below a brief synopsis of the condition of each county of the Territory, which contains such information as would be desirable to persons contemplating a location in the Territory:

Beaver County.—Location, extreme northwest; area, 3,681,000 acres; population, 2,847; taxable valuation, $1,485,564; land taxed, 112,859 acres; county bonded debt, $15,500; county tax levy, 7⅓ mills; number of school districts, 44; number of school children, 947; school land in county, 1,352 quarter sections; Government land subject to homestead entry, 3,211,931 acres; county seat, Beaver; other leading towns, Hardesty and Kenton; principal occupation of people, stock raising; products, cattle, sheep, horses, and stock feed; undeveloped resources, sheep raising, fruit production by irrigation, and minerals; some copper now being mined in western part.

Blaine County.—Location, middle west; area, 593,000 acres; population, 10,682; taxable valuation, $505,711; land taxed, 22,165 acres; county bonded debt, $38,000; county tax levy, 36.5 mills; number of school districts, 81; number of school children, 2,793; school land in county, 200 quarter sections; Government land subject to homestead entry, 3,788 acres; county seat, Watonga; other leading towns, Geary and Okeene; principal occupation of people, agriculture and stock raising; products, wheat, cotton, corn, castor beans, peaches, hogs, and cattle; manufacturing industries, cotton gins, salt works; undeveloped resources, immense cement, salt, and building stone deposits.

Canadian County.—Location, south central; area, 480,880 acres; population, 20,000; taxable valuation, $5,591,056; land taxed, 278,015 acres; county bonded debt, $56,500; county tax levy, 14.85 mills; number of school districts, 83; number of school children, 4,742; school land in county, 168 quarter sections; Government land subject to homestead entry, 405 acres; county seat, El Reno; other leading towns, Okarche, Yukon, and Union; principal occupation of people, agriculture; products, wheat, corn, cotton, cattle, and hogs; manufacturing industries, flouring mills, cement works, cotton compress and gins; undeveloped resources, cement and clay deposits.

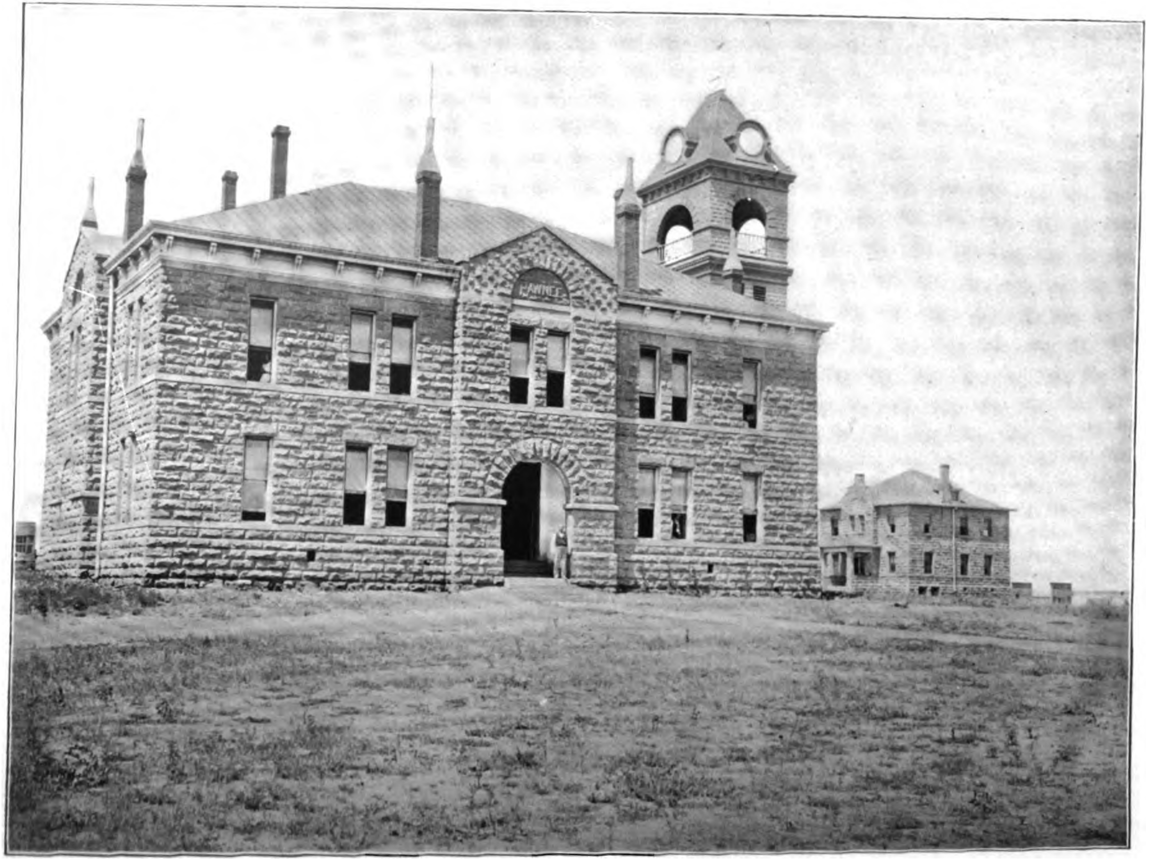
Cleveland County.—Location, extreme south; area, 348,000 acres; population, 15,338; taxable valuation, $1,775,142; land taxed, 208,022 acres; county bonded debt, $77,500; county tax levy, 17 mills; number of school districts, 69; number of school children, 6,057; school land in county, 122 quarter sections; Government land subject to homestead entry, none; county seat, Norman; other leading towns, Lexington, Noble, and Moore; principal occupation of people, agriculture; products, corn, wheat, cotton, hogs, cattle, and sheep; manufacturing industries, cotton seed oil mill and gins, flouring mills.

Custer County.—Location, central west; area, 647,000 acres; population, 12,260; taxable valuation, $1,063,804; land taxed, 19,906 acres; county bonded debt, $38,800; county tax levy, 20 mills; number of school districts, 63; number of school children, 3,185; school land in county, 252 quarter sections; Government land subject to homestead entry, 20,334 acres; county seat, Arapahoe; other leading towns, Weatherford and Independence; principal occupation of people, agriculture and stock raising; products, cotton, corn, wheat, hogs, and cattle; manufacturing industries, flouring mills, cotton gins; undeveloped resources, cement and building stone deposits.

Day County.—Location, extreme west; area, 666,000 acres; population, 1,800; taxable valuation, $441,842.60; land taxed, 7,912 acres; county bonded debt, $19,800; county tax levy, 27 mills; number of school districts, 19; number of school children, 399; school land in county, 240 quarter sections; Government land subject to homestead entry, 488,689 acres; county seat, Grande; other leading towns, Ioland and Texmo; principal occupation of people, stock raising; products, cattle feed and cattle.

Dewey County.—Location, north middle west; area, 638,000 acres; population, 7,966; taxable valuation, $680,000; land taxed, 8,000 acres; county bonded debt, $20,600; county tax levy, 24 mills; number of school districts, 63; number of school children, 2,242; school land in county, 259 quarter sections; Government land subject to homestead entry, 79,792 acres; county seat, Taloga; other leading towns, Seiling and Butte; principal occupation of people, agriculture and stock raising; products, corn, kaffir corn, castor beans, wheat, and cattle; undeveloped resources, cement deposits.

Garfield County.—Location, north central; area, 640,000 acres; population, 20,438; taxable valuation, $2,027,914; land taxed, 140,664 acres; county bonded debt, $46,000; county tax levy, 24 mills; number of school districts, 127; number of school children, 6,132; school land in county, 465 quarter sections; Government land subject to



PAWNEE COUNTY COURT-HOUSE AND JAIL.

homestead entry, none; county seat, Enid; other leading towns, Waukomis, North Enid, and Kremlin; principal occupation of people, agriculture; products, wheat, corn, castor beans, fruit; manufac uring industries, flouring mills, cotton gins, brickyards; undeveloped resources, cement and coal deposits.

Grant County.—Location, middle north; area, 672,000 acres; population, 19,630; taxable valuation, $1,864,343; land taxed, 104,426 acres; county bonded debt, $29,000; county tax levy, 19 mills; number of school districts, 123; number of school children, 5,146; school land in county, 480 quarter sections; Government land subject to homestead entry, 1,120 acres; county seat, Pond Creek; other leading towns, Medford, Jefferson, and Manchester; principal occupation of people, agriculture; products, wheat, corn, castor beans, cattle; manufacturing industries, flouring mills; undeveloped resources, salt plains.

Greer County.—Location, extreme southwest; area, 1,511,575 acres; population, 17,750; taxable valuation, $1,413,231; land taxed, 106,191 acres; county bonded debt, none; county tax levy, 7.6 mills; number of school districts, 79; number of school children, 4,921; school land in county, 1,134 quarter sections; Government land subject to homestead entry, 405,620 acres; county seat, Mangum; other leading towns, Altus, Navajo, and Granite; principal occupation of people, agriculture and stock raising; products, wheat, cotton, corn, cane, cattle, and sheep; manufacturing industries, salt and cement works, flouring mills, cotton gins; undeveloped resources, salt, cement, mineral, and oil deposits.

Kay County.—Location, northeast; area, 573,000 acres; population, 20,298; taxable valuation, $2,647,044; land taxed, 93,962 acres; county bonded debt, $35,000; county tax levy, 4 mills; number of school districts, 88; number of school children, 6,260; school land in county, 325 quarter sections; Government land subject to entry, none; county seat, Newkirk; other leading towns, Ponca, Blackwell, Tonkawa, and Kildare; principal occupation of people, agriculture; products, wheat, corn, cattle, and hogs; manufacturing industries, flouring mills, cement works, brickyards, and stone quarries; undeveloped resources, cement and stone deposits.

Kingfisher County.—Location, central; area, 493,570 acres; population, 18,187; taxable valuation, $2,067,611; land taxed, 348,043 acres; county bonded debt, $25,000; county tax levy, 15 mills; number of school districts, 122; number of school children, 5,910; school land in county, 200 quarter sections; Government land subject to homestead entry, none; county seat, Kingfisher; other leading towns, Hennessey, Cashion, and Kiel; principal occupation of people, agriculture; products, corn, wheat, cotton, castor beans; manufacturing industries, flouring mills, ice plant, cement works, cotton gins; undeveloped resources, cement beds.

Lincoln County.—Location, middle east; area, 619,000 acres; population, 26,680; taxable valuation, $1,967,596; land taxed, 152,538 acres; county bonded debt, $67,000; county tax levy, 15.7 mills; number of school districts, 133; number of school children, 8,653; school land in county, 212 quarter sections; Government land subject to homestead entry, none; county seat Chandler; other leading towns, Stroud, Wellston, and Carney; principal occupation of people, agriculture; products, cotton, corn, peanuts, castor beans, hogs, and cattle; manufacturing industries, oil mill, cotton gin, flouring mills, pressed-brick works; undeveloped resources, cement and clay beds.

Logan County.—Location, east central; area, 465,600 acres; population, 28,000; taxable valuation, $4,441,810; land taxed, 384,775 acres; county bonded debt, $163,000; county tax levy, 10 mills; number of school districts 97; number of school children, 7,603; school land in county, 165 quarter sections; Government land subject to homestead entry, none; county seat, Guthrie; other leading towns, Mulhall, Orlando, Langston; principal occupation of people, agriculture and commerce; products, wheat, corn, cotton, fruit, melons, castor beans, cattle, hogs, broom corn; manufacturing industries, oil mill, cotton gins, flouring mills, planing mills, broom factory, foundries, ice plant, etc.; undeveloped resources, canning fruits, tanning hides, small manufactories.

Noble County.—Location, northeast; area, 398,000 acres; population, 12,639; taxable valuation, $1,857,169; land taxed, 29,555 acres; county bonded debt, $57,000; county tax levy, 27.15 mills; number of school districts, 59; number of school children, 3,307; school land in county, 192 quarter sections; Government land subject to homestead entry, none; county seat, Perry; other leading towns, Billings and Morrison; principal occupation of people, agriculture; products, wheat, corn, cotton, castor beans, cattle, and hogs; manufacturing industries, flouring mills, ice plant, cotton gins.

Oklahoma County.—Location, south central; area, 461,720 acres; population, 28,000; taxable valuation, $4,386,337; land taxed, 330,953 acres; county bonded debt, $136,900; county tax levy, 9.5 mills; number of school districts, 84; number of school children, 7,352; school land in county, 158 quarter sections; Government land subject to homestead entry, none; county seat, Oklahoma City; other leading towns, Edmond, Choctaw City, and Luther; principal occupation of people, agriculture and commerce; products, wheat, corn, cotton, tree fruits, grapes, cattle, hogs; manufacturing industries, oil mill, cotton compress, and gins, flouring mills, ballast works, brickyards, broom, and other factories; undeveloped resources, wine making, clay deposits, fruit canning.

Pawnee County.—Location, extreme northeast; area, 333,000 acres; population, 12,222; taxable valuation, $1,920,000; land taxed, 9,115 acres; county bonded debt, $32,000; county tax levy, 25 mills; number of school districts, 63; number of school children, 4,487; school land in county, 200 quarter sections; Government land subject to homestead entry, 244 acres; county seat, Pawnee; other leading towns, Cleveland and Blackburn; principal occupation of people, agriculture and stock raising; products, corn, cotton, castor beans, cattle, and hogs; manufacturing industries, flouring mills, cotton gins, saw mills; undeveloped resources, coal, oil, and stone deposits.

Payne County.—Location, northeast; area, 484,000 acres; population, 19,873; taxable valuation, $2,674,564; land taxed, 248,600 acres; county bonded debt, $78,700; county tax levy, 10 mills; number of school districts, 99; number of school children, 6,751; school land in county, 198 quarter sections; Government land subject to homestead entry, none; county seat, Stillwater; other leading towns, Perkins, Ripley, Cushing, and Glencoe; principal occupation of people, agriculture; products, wheat, corn, cotton, castor beans, cattle, hogs, and fruit; manufacturing industries, flouring mills, cotton gins, brick plant; undeveloped resources, indications of oil.

Pottawatomie County.—Location, extreme southwest; area, 501,000 acres; population, 22,476; taxable valuation, $1,784,448; land taxed, 112,211 acres; county bonded debt, $51,500; county tax levy, 22 mills; number of school districts, 109; number of school children, 10,152; school land in county, 168 quarter sections; Government land subject to homestead entry, none; county seat, Tecumseh; other leading towns, Shawnee, McLoud, and Keokuk Falls; principal occupation of people, agriculture; products, cotton, corn, cattle, hogs, peaches, apples, and grapes; manufacturing industries, flouring mill, oil mill, cotton gins, railway shops, brickyards; undeveloped resources, building stone and clay beds.

Roger Mills County.—Location, extreme west; area, 757,000 acres; population, 6,173; taxable valuation, $738,150; land taxed, 12,492 acres; county bonded debt, $23,450; county tax levy, 19.3 mills; number of school districts, 24; number of school children, 1,418; school land in county, 265 quarter sections; Government land subject to homestead entry, 152,526 acres; county seat, Cheyenne; other leading town, Berlin; principal occupation of people, stock raising; products, cattle and cattle feed, corn, cotton, and wheat.

Washita County.—Location, southwest; area, 628,000 acres; population, 15,108; taxable valuation, $1,051,678; land taxed, 21,000 acres; county bonded debt, $76,100; county tax levy, 19 mills; number of school districts, 81; number of school children, 4,606; school land in county, 224 quarter sections; Government land subject to homestead entry, 1,940 acres; county seat, Cordell; other leading towns, Cloud Chief, Mountain View (Oakdale), and Wood; principal occupation of people, agriculture; products, cotton, wheat, corn, castor beans, cattle, and hogs; undeveloped resources, cement and gypsum beds.

Woods County.—Location, central north; area, 1,732,000 acres; population, 31,988; taxable valuation, $3,241,209; land taxed, 83,469 acres; county bonded debt, $47,200; county tax levy, 9 mills; number of school districts, 235; number of school children, 9,645; school land in county, 1,223 quarter sections; Government land subject to homestead entry, 135,565 acres; county seat, Alva; other leading towns, Cleo, Augusta, and Carwile; principal occupation of people, agriculture and stock raising; products, wheat, corn, cane, castor beans, peaches, cattle, and hogs; manufacturing industries, flouring mills, creamery; undeveloped resources, salt and guano deposits.

Woodward County.—Location, northwest; area, 2,124,000 acres; population, 11,554; taxable valuation, $2,146,378; land taxed, 40,631 acres; county bonded debt, $2,500; county tax levy, 18 mills; number of school districts, 63; number of school children, 2,026; school land in county, 702 quarter sections; Government land subject to homestead entry, 1,231,431 acres; county seat, Woodward; other leading towns, Curtis and Gage; principal occupation of people, agriculture and stock raising; products, cattle, sheep, wheat, corn, cane, and stock feed; undeveloped resources, salt and cement deposits.

LAND GRANT AGITATION.

The people of Beaver County have been more or less disturbed during the year by the claims of several attorneys and speculators who claimed to have purchased an old Mexican land grant embracing a large part of this county.

This purported grant, which was said to have been made to Dr. Charles Beales and Jose Manuel Royuela by the Mexican States of Coahuila and Texas in 1832, aggregating 60,000,000 acres, has, I am informed, been long ago passed upon by the Supreme Court of the United States and rejected, so the people of the county who have secured title to their lands from the Government need have no fear of being disturbed.

This county, which is located in the extreme northwestern portion of the Territory and is 168 miles long by 35 wide, still has within its border about 3,000,000 acres of vacant Government land.

This county was for a long time known as No Man's Land, not being under the jurisdiction of any State or Territory and no laws whatever being in force there. Many settlers were in this land at that time, and they organized a provincial government, and on March 4, 1886, resolved themselves into a territory to be called Cimarron, elected Dr. Chase a Delegate to Congress, and demanded recognition. Nothing came of this organization, however, except as a means of protecting property rights among the settlers, and in 1890, when Oklahoma was organized as a Territory, No Man's Land was made a part of it as Beaver County.

The conditions which prevail in this county are somewhat different from those in other portions of the Territory. The county lies on the high western plains, the western end extending far up the slope of the Rockies, and while there are many fine streams of water, in the valleys of which are fine farms, the bulk of the land is suitable for stock raising alone. A man can not do much in this industry on 160 acres of land, which is all he can secure under the homestead laws; and I therefore earnestly renew my recommendation of two years ago that legislation be enacted under which settlers in this county can obtain title, by purchase or otherwise, to at least one full section of land. This would be but a matter of justice to the people there, and assist greatly in developing that section of the Territory.

MILITARY POSTS.

Two active military posts and two abandoned ones are located within the Territory.

Fort Supply, located in Woodward County, was abandoned several years ago, and the many fine buildings and improvements are rapidly going to ruin. The reservation of 40,000 acres surrounding the post is, I understand, soon to be sold in small tracts. No better disposition could be made of the post than for Congress to present it to the Territory for use as a public institution, and I earnestly renew my recommendation along this line made in my preceding reports.

Old Fort Cobb, on the Washita, was abandoned many years ago, and but a mere mound of earth marks its site.

Fort Reno and Fort Sill are both used as stations for the Regular Army, and are modern in construction and equipment. They are among the attractive places of public interest in the Territory, and are annually visited by thousands of people.

NATIONAL GUARD.

The National Guard is now upon a better footing than ever before since its organization in 1894, the same being due largely to the annual encampments and monthly target practice during the summer months, commencing June 15 and closing October 15.

There is now one full regiment of twelve companies and one regimental band organized, which are located as follows: Headquarters, band and Company A, at Guthrie; Company B, at Chandler; Company C, at Medford; Company D, at Ponca City; Company E, at Pawnee; Company F, at Shawnee; Company G, at Hennessey; Company H, at Edmond; Company I, at Alva-Woodward; Company K, at Enid; Company L, at Perry; Company M, at Oklahoma City.

Eight of the companies are equipped with the undress uniform and the Springfield rifle, caliber .45.

Company I, located at Alva-Woodward, was organized March 14, 1900. The second platoon, with the captain and second lieutenant, is stationed at Alva, and the first platoon, with the first lieutenant, is stationed at Woodward. Dividing this company and stationing a platoon at each place was done for the reason that Alva and Woodward were both desirous of having a company, and, on account of their being situated in the extreme northwest portion of the Territory, it was deemed advisable to give each a platoon.

Company M, located at Oklahoma City, was organized April 19, 1900, and have only been equipped with the Springfield rifle, bayonet scabbards, waist belts, and cartridge boxes.

Company L, located at Perry, was organized May 12, 1900.

Company G, located at Hennessey, was organized July 7, 1900. This company was organized and given the initial letter "G" in lieu of the company at Kingfisher (Company G), which was disbanded June 5, 1900, the same having become reduced to less than the minimum allowed by law.

The regimental band is fully equipped with the dress, undress, and summer uniforms, and necessary instruments, is subject to the same discipline and regulations as the National Guard, and the band to-day is one of the best organizations of its kind in the Southwest.

I am notified that the Territory's quota of the Federal appropriation the coming year will be $5,744.06, which is more than double that previously received, and will be the means of better equipping the Territorial militia in every way.

The last legislature appropriated $3,000 annually for the holding of encampments. The encampment held last year was productive of positive good in imparting practical instructions. The regiment reported at encampment with 396 officers and enlisted men. The regiment then consisted of nine companies, divided into three battalions of three companies each. Daily guard mounts were had and instruction given as far as possible in sentinel duties and guard mounting, so that the officers and men understood the work at the close of the encampment sufficiently to study it intelligently.

Battalion and regimental drills were had whenever the weather permitted, and daily regimental parades; and by the closing day of the encampment the parades and drills were creditable, and superior to many seen in volunteer regiments after six months of service.

It is my opinion that after the encampment this year the Oklahoma

National Guard will show itself fit and competent to render any service to which it may be called by the Territory or the nation.

The personnel of the militia includes the best material among the young men of the Territory, and the discipline is generally good.

The staff of the commander in chief is as follows:

Gen. Bert C. Orner, adjutant-general, Guthrie.
Col. H. K. Bickford, inspector-general, Alva.
Maj. Robert A. Lowry, judge-advocate-general, Stillwater.
Maj. Robert A. Workman, surgeon-general, Woodward.
Maj. Richard Messall, paymaster-general, Enid.
Maj. Harry W. Pentecost, quartermaster-general, Guthrie.
Maj. Paul Jundt, commissary-general, Guthrie.
Maj. J. E. Ball, ordnance officer, Guthrie.
Capt. Bert C. Maine, aid-de-camp, Guthrie.
Capt. B. Walter Poland, aid-de-camp, Guthrie.
Capt. Fred W. James, aid-de-camp, Lexington.

The field, staff, and line officers are as follows:

FIELD AND STAFF OFFICERS.

Roy V. Hoffman, colonel, Chandler.
Fred L. Boynton, lieutenant-colonel, Kingfisher.
S. Arthur McGinnis, major, Blackwell.
Alvah H. Young, major, Shawnee.
William P. Baker, captain and surgeon, Guthrie.
James P. Neal, captain and judge-advocate, Pawnee.
P. L. Ulam, captain and quartermaster, Chandler.
Job Ingram, captain and chaplain, Kingfisher.
Elmer Solomon, captain and commissary, Kingfisher.
Edgar W. Jones, first lieutenant and adjutant, Guthrie.

LINE OFFICERS.

Capt. L. C. Booth, Company A, Guthrie.
Capt. Orin Ashton, Company B, Chandler.
Capt. Fred Vandenburgh, Company C, Medford.
Capt. John C. Goranfle, Company D, Ponca City.
Capt. C. C. Rambo, Company E, Pawnee.
Capt. L. R. Minton, Company F, Shawnee.
Capt. Elmer E. Swim, Company G, Hennessey.
Capt. E. H. Jayne, Company H, Edmond.
Capt. O. G. Palmer, Company I, Alva-Woodward.
Capt. Charles J. West, Company K, Enid.
Capt. Sam Wadsworth, Company L, Perry.
Capt. Fred P. Finerty, Company M, Oklahoma City.

OKLAHOMA PATRIOTISM.

There are residing within Oklahoma Territory 7,399 ex-Union soldiers who receive pensions from the Government, and several thousand who are not pensioners, who, together with many loyal confederate veterans, constitute a patriotic nucleus of which any Commonwealth might well be proud.

But the people of Oklahoma are all true patriots, and in no section of the Union will be found a larger per cent ready to go forth to battle for their country.

When the first call was made for volunteers in the Spanish-American war Oklahoma was ready with several regiments, although but 85 men were called for from the Territory. Those who went formed one of the best troops of Roosevelt's gallant Rough Riders and were found in the thickest of the fights in which that regiment participated. At the second call Oklahoma sent a battalion, though ten times as many offered their services. Many enlisted in the United States volunteer regiments organized later to go to the Philippines, and a hundred or more gallant sons of Oklahoma are to-day upholding the old flag in that far-off land.

Recently when war with China seemed inevitable the first regiment of National Guard tendered their services to go there, and several independent companies and scores of individuals begged for a chance to enlist.

Oklahoma, I am certain, will ever be found willing to respond to any call that may be made on her to defend the nation or uphold the flag wherever the Government shall determine that it shall be flung to the breeze.

OKLAHOMA ABROAD.

Oklahoma and her resources and products are fast becoming known over the world. The rapid development of the country, the abundance and superior quality of the products of the farms and orchards of the Territory, have attracted the attention of the entire nation, and no section of the country is to-day more favorably known as an agricultural, horticultural, and stock-raising country.

The first public exhibit of the products of the Territory was made at the World's Fair in Chicago in 1893, and there is no higher tribute to the excellence of Oklahoma agricultural products than that paid by the awards at that great fair, where were collected the products of all nations. A list of awards is given below:

World's Columbian Exposition Awards to Oklahoma.

AGRICULTURAL EXHIBIT.

Exhibitor.	Address.	Exhibit.
Group 1:		
C. G. Jones	Oklahoma City	Flour.
Do	do	Wheat.
Oklahoma Territory	Cleveland County	Corn, oats, buckwheat, grass, and peanuts.
Group 3:		
Oklahoma Territory	Guthrie	Red sorghum.
Group 5:		
A. J. Seay	Kingfisher	Squashes.
Group 9:		
Oklahoma Territory	Guthrie	Cotton.

TRANS-MISSISSIPPI AND INTERNATIONAL EXPOSITION.

At the Trans-Mississippi and International Exposition at Omaha, in 1898, the following awards were made to Oklahoma:

Oklahoma Territory, silver medal for State exhibit showing greatest variety of farm products.

Oklahoma Territory, silver medal for exhibit of grains, beans, and cotton.
Eagle Mills, Edmond, gold medal on soft-wheat flour.
Eagle Mills, Edmond, gold medal on hard-wheat flour.
Ponca City Roller Mills, silver medal on Oklahoma flour.
Perry Milling Company, Perry, silver medal on Oklahoma flour.
Hennessey Roller Mills, gold medal on "Perfection" Oklahoma flour.
Kingfisher Milling Company, gold medal, Oklahoma flour.
Oklahoma Mill Company, of Kingfisher, gold medal on Oklahoma flour.
Canadian Mill Company, of El Reno, bronze medal on Oklahoma flour.
El Reno Mill and Elevator Company, silver medal on Oklahoma flour.

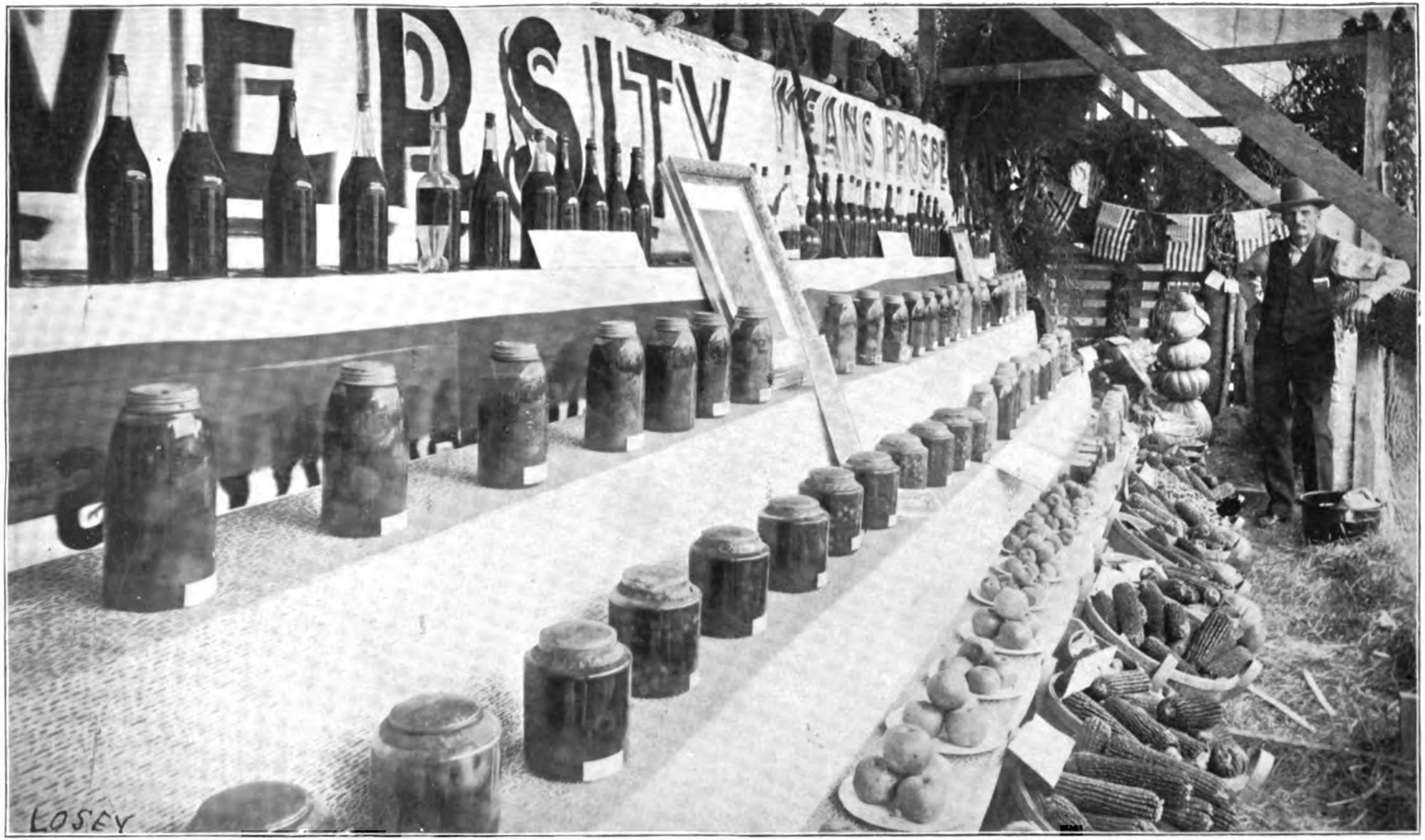


Exhibit of 205 Varieties of Products produced upon One Oklahoma Farm by V. E. Breeze.

Some of the largest corn and samples of native grasses, wheat, Kaffir corn, and other products in the United States agricultural exhibit at the Paris Exposition this year are from Oklahoma, and the Territory contemplates participation in the Pan-American Exposition at Buffalo, N. Y., next year, and the World's Fair at St. Louis in 1903.

Exposition cars laden with grains, fruits, and other products have been almost yearly sent out of the Territory to the cities of the North and East and have everywhere attracted much attention and favorable comment.

OFFICIAL ROSTER.

There have been a number of changes in officials of the Territory during the year, and the official roster is now as follows:

Governor: Cassius M. Barnes.
Private secretary to the governor: Fred L. Wenner.
Secretary of the Territory and ex officio lieutenant-governor: W. M. Jenkins.
Assistant secretary: J. J. Houston.
Attorney-general: J. C. Strang.
Treasurer: Frank M. Thompson.
Superintendent of public instruction and ex officio auditor: S. N. Hopkins.
Secretary school-land board and ex officio school-land commissioner: Charles H. Filson.
Assistant secretary: Joseph H. Norris.
Oil inspector: Amos A. Ewing.
Bank commissioner: W. S. Search.
Librarian: George H. Dodson.
Deputy auditor: E. P. McCabe.
Adjutant-general: Bert C. Orner.
Grain inspector: C. T. Prouty.
Game warden: C. M. Keiger.
Superintendent of public health: L. Haynes Buxton.
Delegate to Congress: D. T. Flynn.
Territorial school land board: Governor Barnes, Secretary Jenkins, and Auditor Hopkins.
Board of railway assessors: Governor Barnes, Secretary Jenkins, and Auditor Hopkins.
Board of equalization: Governor Barnes, Secretary Jenkins, and Auditor Hopkins.
Regents of the Territorial University: Governor Barnes; Henry E. Asp, Guthrie; C. L. Botsford, Norman; C. O. Blake, El Reno; G. W. Bellamy, El Reno; George W. Sutton, Cleveland.
Regents of the agricultural and mechanical college: Governor Barnes; Frank J. Wikoff, Stillwater; C. J. Benson, Shawnee; J. P. Gandy, Alva; J. C. Tousley, Weatherford; W. E. Bolton, Woodward.
Live stock sanitary commission: Same as the regents of the agricultural and mechanical college.
Board of education of normal schools: Superintendent of Public Instruction Hopkins; Treasurer Thompson; D. P. Marum, Woodward; D. D. Leach, Oklahoma City; John D. Share, Alva.
Board of regents of colored agricultural and normal university: Superintendent of Public Instruction Hopkins; Treasurer Thompson; Rev. L. H. Holt, Guthrie; E. O. Tyler, Kingfisher; J. W. Taylor, Guthrie.
Territorial board of education: Superintendent of Public Instruction Hopkins; President D. R. Boyd, of Norman; President E. D. Murdaugh, of Edmond; Prof. G. D. Moss, Kingfisher; Prof. Richard H. Ewing, of Stillwater.
Presidents of the Territorial institutions of learning: D. R. Boyd, Norman, of the Territorial university; E. D. Murdaugh, Edmond, of the Oklahoma normal school; Jas. E. Ament, Alva, of the northwestern normal; A. C. Scott, Stillwater, of the agricultural and mechanical college; Inman E. Page, Langston, of the colored university.
Board of health: Auditor Hopkins; Dr. L. Haynes Buxton, Oklahoma City; Dr. B. F. Hamilton, Shawnee.
Board of pharmacy: F. B. Lillie, Guthrie; C. N. Dow, Pond Creek; E. E. Howendobler, Perry.

Board of dental examiners: W. E. Furrow, Guthrie; Robert Wilson, El Reno; E. E. Kirkpatrick, Oklahoma City; J. Q. Waddell, Kingfisher; L. A. Kelsy, Chandler.

Supreme Court: Chief justice, J. H. Burford, Guthrie; associate justices, C. E. Irwin, El Reno; B. F. Burwell, Oklahoma City; B. T. Hainer, Perry; J. L. McAtee, Enid. These judges also serve as judges of the district court in the first to fifth districts, respectively.

Clerk of courts: Supreme court, B. F. Hegler, Guthrie; first district, M. C. Hart, Guthrie; second district, E. M. Hegler, El Reno; third district, Byron D. Shear, Oklahoma City; fourth district, J. E. Pickard, Perry; fifth district, J. P. Renshaw, Pond Creek.

FEDERAL OFFICERS.

United States district attorney: Horace Speed.

Assistant United States attorneys: John W. Scothorn and B. S. McGuire.

United States marshal: C. H. Thompson.

Registers and receivers of United States land offices: Guthrie, J. J. Boles and F. E. McKinley; Oklahoma City, S. S. Price and A. H. Classon; Kingfisher, E. E. Brownlee and J. V. Admire; Enid, J. B. Cullison and D. W. Eastman; Perry, A. H. Boles and J. R. Scott; Alva, R. A. Cameron and W. J. French; Woodward, F. S. Healy and J. W. Miller; Mangum, H. D. McKnight and James Kelley.

United States Indian agents: Osage, O. A. Mitcher, Pawhuska; Ponca, Pawnee, and Otoe, John Jensen, White Eagle; Iowa, Sac and Fox, and Pottawatomi, Lee Patrick, Sac and Fox; Cheyenne and Arapahoe, Maj. George W. H. Stouch, Darlington; Kiowa, Comanche, and Apache, Col. Jas. F. Randlett, Anadarko.

INDIANS.

The Indian population of the Territory numbers 12,980, all under the care of five agencies, except 298 Arizona Apaches who are held at Fort Sill as prisoners of war.

The enumeration at the different agencies is as follows:

OSAGE AGENCY.

Osage	1,798	Kaw	213

WHITE EAGLE AGENCY.

Ponca	56	Otoe	372
Pawnee	650	Tonkawa	59

SAUK AND FOX AGENCY.

Sauk and Fox	528	Pottawatomi	1,700
Iowa	89	Kickapoo	246
Shawnee	507		

DARLINGTON AGENCY.

Cheyenne	2,037	Arapahoe	981

KIOWA AGENCY.

Kiowa	1,139	Apache	172
Comanche	1,500	Wichita and affiliated tribes	925

The Indians of the Territory are all making some progress, those whose lands have been allotted being distinctly in advance.

Allotment of lands, citizenship, and cutting off of Government rations is certainly the solution of the Indian problem.

The Indian is certainly a disappointment to the humanitarian who expects a few years of education to revolutionize habits and customs and instincts which have been centuries in formation, and experience demonstrates that he more often deteriorates than advances when kept under the fostering care of the Government and not allowed to mingle with white men or come in actual contact with the ways of civilization.

In spite, however, of all the mistakes of policy applied to him, the Indian is slowly advancing, and the condition of the tribes in Oklahoma is, on the whole, really encouraging.

I give below communications received from the various agents in charge of the tribes in the Territory, which contain much interesting information:

WHITE EAGLE AGENCY.

Hon. John Jensen, the agent in charge of the tribes at this agency, has the following to say:

There are four tribes of Indians under the supervision of this agency: Ponca, Pawnee, Otoe and Missouri, and Tonkawa.

All the Indians of this agency have received allotments of land and have, to a certain extent, adopted the pursuits of civilized life. The Poncas and Otoes still live upon reservations, but the Pawnees and Tonkawas have no reservation; they live in organized counties of the Territory and are full-fledged citizens of the United States, except that they can not dispose of their land.

A great many of the allotments of these Indians have been leased to white farmers for grazing and agricultural purposes. The lessees pay cash rents ranging from 20 cents to $2 an acre. This affords a very large annual income to these Indians, which enables them to live, to a considerable extent, in idleness. If the welfare of the Indian was the only thing to be considered, it would be better that his income be so limited that he would be compelled to work, for without some such incentive they will not labor at all.

The following figures represent the amount of crops raised by the Indians of this agency for the fiscal year ending June 30, 1900:

Wheat	bushels	12,950
Oats	do	1,400
Corn	do	73,350
Potatoes	do	1,852
Turnips	do	75
Onions	do	355
Beans	do	689
Melons	number	15,450
Pumpkins	do	1,900
Hay, cut	tons	2,374
Lumber, sawed	feet	131,793
Wood, cut	cords	882

The stock possessed by the several tribes is as follows:

Horses	1,945
Mules	54
Cattle	157
Swine	300
Domestic fowls	1,760

The Ponca Indians cultivate 1,230 acres of land and have 5,600 acres under fence.

The Pawnees cultivate 1,465 acres of land and have 10,920 acres under fence.

The Otoes cultivate 2,300 acres and have 7,500 acres under fence.

The Tonkawas work but very little; they cultivate about 70 acres of land and have about 300 acres under fence. All of these Indians have done a little better the past year than they did the year previous.

There are three boarding schools at this agency: The Ponca, the Pawnee, and Otoe, with a combined enrollment of 325 pupils. All of these schools have performed excellent work during the past year.

We raise about enough forage at these schools to supply most of the school and agency stock. The future of the Indian depends very largely upon successful education, but the results are very slow and not very satisfactory. Some of the worst Indians that we have, have received the best education that the Government can give them. On the other hand, I can say that some of the best Indians we have are those who have been educated. Some of the educated Indians hold responsible positions in the Government service. I suppose that there is slight progress each year, but it is not marked enough to be very encouraging.

OSAGE AGENCY.

Agent O. A. Mitcher supplies the following valuable information:

The Osage and Kansas Indian reservations are located in the northeast portion of Oklahoma, north and east of the Arkansas River, and contain 1,500,000 acres of land, a large portion of which is capable of producing large crops of wheat, corn, oats, potatoes, cane, and fruits. With proper cultivation it would be the garden spot of Oklahoma.

Oil, natural gas, coal, lead, and zinc can be found on the Osage Reservation. Shipments of oil are being made from wells sunk near the eastern boundary.

About 900,000 acres are leased on the two reservations to cattlemen for pasture at 10 cents an acre annual rental, and it is said that no better pasture can be found, as the grass is nutritious and water abundant. If the tillable land on the reservation was all under cultivation it would support a large population. At present there are scattering farms on the reservation rented from the Indians by white men, as it is entirely contrary to the ideas of these Indians to do any manual labor.

The Osage and Kansas reservations are the last of the many Indian reservations that formerly composed the Indian Territory. All the balance have either been opened up to white settlement or preparations are being made to do so at an early date. The sooner this reservation is opened up to white settlement the better it will be for the Indian, the Territory, and the whole country.

The Osage tribe numbers 1,798 persons, of which number there are 877 full bloods and 921 mixed bloods. The full bloods are constantly decreasing in numbers and it is only a question of a few years when they will be extinct. The mixed bloods are increasing in numbers and are just as capable of becoming citizens and caring for themselves as the same number of white men.

The Kaw number 213 persons, of which number 99 are full bloods. The same remarks apply to this tribe that have been made about the Osage.

The Osage have $8,500,000 held in trust for them by the United States Government, which allows 5 per cent interest, or about $425,000 a year. About $360,000 of the interest fund is paid to the tribe as an annuity, amounting to about $200 per capita.

The Osages are the richest people in the world and consequently the laziest.

SAC AND FOX AGENCY.

In the absence of the agent, Hon. Lee Patrick, William R. Gulick, clerk in charge, furnishes the following very interesting data:

The Sac and Fox Indian Agency is located at Sac and Fox Agency, Okla., six miles south of Stroud, a flourishing town on the St. Louis and San Francisco Railroad, and with which it is connected by telephone.

The Indians under the charge of this agency are the Sac and Fox, the Iowa, the Absentee Shawnee, and the Pottawatomie. They inhabit a strip of country about 15 miles wide by 110 miles in length, located in Payne, Lincoln, and Pottawatomie counties, and their lands are among the best in Oklahoma Territory.

All of these Indians over ten years of age have allotments. The Sac and Fox Indians are the remnant of one of the most powerful tribes that in the early part of the nineteenth century inhabited the north central portion of the United States. In the war of 1812 they fought with the British. At the conclusion of that war they made treaty with the United States and were ceded a large area of land in Missouri and Iowa. In 1836 a part of this tribe took up arms under Black Hawk against the United States and were finally defeated. Eventually they sold their land in Iowa and Missouri and removed to Kansas. From there they came to Oklahoma. In 1890 they were allotted 160 acres of land each and received $485,000 for the remainder of their reservation, $300,000 of which was placed to their credit with the Treasurer of the United States, bearing 5 per cent interest. They had $1,000,000 on deposit, bearing the same interest, derived from previous sales of their lands in Kansas, Missouri, and Iowa. The interest on these funds is paid to them semiannually from this office.

The Sac and Fox having been a warrior race do not take kindly to farming, and as a result not more than forty are cultivating any land whatever, and not more than five who could cultivate their allotments and make a living therefrom. About half of their allotments are leased to white tenants who pay a cash rent semiannually, the price varying from $30 per year to $150. The tribe is decreasing in numbers, there being a net decrease in two years of over 60. The present census shows 468 names. This tribe owns the lands on which the agency buildings are located. They contribute

$5,000 toward the maintenance of a Government boarding school located at the agency. This school is under the charge of Supt. Horace J. Johnson and is one of the best-conducted schools in the Indian service. About 90 Sac and Fox children are in attendance ten months in the year, and practically every Sac and Fox child of school age is in the school. The hope of this tribe is largely in the education of their young.

The Iowas are also a remnant of a powerful northern tribe. They came to Oklahoma about 1880, and in 1890 were allotted 80 acres each of choice lands along the southern bank of the Cimarron in the vicinity of Perkins. They sold the balance of their lands to the United States Government, the funds for which are now held in trust and being paid to them in installments. They have other funds in trust from which they receive about $60 per capita per year. A much larger per cent of the Iowas cultivate their lands than of the Sac and Fox. They are quite shrewd traders and nearly all speak English. The most of their lands are cultivated by themselves or leased. Their children are nearly all in a Government school at the Otoe Agency. Their members vary but little from year to year; the present census will show them to number 90. They received a $15,000 payment of trust funds in June.

The Absentee Shawnees have resided in Oklahoma for nearly 30 years. They were a powerful tribe that occupied a large portion of the lands now embraced in boundaries of the state of Ohio. The first treaty made with them by the United States Government was in January, 1788. In 1830 a treaty was made by which the Shawnees ceded their Ohio lands for lands west of the state of Missouri, the combined Shawnee tribes receiving a tract of land 25 miles wide by 100 in length. In 1884 they sold a large part of their lands to the United States Government for $829,000, which was paid to them in annual installments of $100,000 each. In 1867 they sold the remainder of their Kansas reservation to the Government for $1 per acre, and moved south on lands from which their allotments were made in 1890.

The Shawnees received 160 acres each and were allowed to sell 80 acres. Their lands were selected along the south bank of the North Canadian River and contain much rich bottom land. They have not received any annuities from the Government for a number of years. They are dependent entirely upon their labor and what they can produce from their lands. A good many farm their own allotments and as a rule they are more independent, dress better, and are on a higher plane of civilization than their more fortunate or unfortunate neighbors, the Sac and Fox, who are still drawing large annuities. Sales from their lands amount to upward of $40,000 per annum, the deeds of which are examined, the appraisements made, and the money paid to the Indians by the United States Indian agent. Some of their lands during the past three months have sold as high as $25 per acre.

There are some good business men and farmers among the Shawnees. A Government boarding school for the Shawnees and Pottawatomies is located at Shawneetown, with Mary G. Williams as superintendent. About 100 pupils are in attendance 10 months in the year, and most excellent work is being done.

There is a strong probability that the school plant will be enlarged during the year and fitted with modern baths and appliances.

The Shawnees are not increasing in numbers but steadily holding their own. The present census will show about 507.

The Pottawatomi were a powerful tribe that with other tribes inhabited the territory now embraced in the boundaries of the State of Illinois, Indiana, and Michigan. In 1795 the first treaty was made by the United States and was negotiated by Anthony Wayne after a long and bloody war with the Indians. In the war of 1812 the Pottawatomi sided with and fought with the British. In 1816 a treaty was effected defining the boundaries of their reservation and in 1832 they were allotted lands in a country now embraced in the boundaries of northern Illinois and southern Wisconsin. In 1846 they sold all of their lands to the United States Government and accepted a reservation in Kansas. They received $850,000, less the cost of their new reservation—which was $87,000—and covered a tract of land 30 miles square. In 1868 a treaty was effected by which the Pottawatomi sold their Kansas lands and came to the Indian Territory. In 1890 1,489 Pottawatomies were allotted lands in Pottawatomie County, Okla. The size of the allottments varied, according to the quality of the land, from 80 to 320 acres. They were allowed to sell half of their allotments.

The Pottawatomi have received no annuities for a number of years. They derive their living entirely from their lands and labor performed. There are among them good farmers, business men, and tradesmen of nearly every kind. Their children attend Absentee Shawnee school, the mission school at Sacred Heart, and a few attend the district school of Pottawatomie County.

They have given up the dancing and dog eating which is still practiced by their less civilized brethren.

The sales of their lands amount to nearly $30,000 per year, which is paid to them through this office. The Pottawatomi are not increasing in numbers. Not receiving annuities, their census, for which no funds are provided by the Department, is estimated, and is thought to be about 1,700.

Whisky drinking is one of the curses of the Indians, and when they have money white men will openly violate the law to sell it to them. Every effort is made to keep the matter in check and numerous arrests and prosecutions have been made during the year.

The agent and his entire force are all interested in the welfare of the Indians and are striving by precept and example to raise them to a higher plane of civilization.

CHEYENNE AND ARAPAHOE.

Maj. George W. H. Stouch, United States Indian agent for these tribes, furnishes me with the following interesting information relative to their condition and progress:

This agency, known as Darlington, was established in 1870, and is pleasantly located on the north fork of the Canadian River, 1½ miles from Fort Reno, and 5 miles from El Reno, the county seat of Canadian County.

The census of June 30, 1900, shows a population of Cheyenne 2,037, Arapaho 981; total, 3,018.

These Indians are very advantageously situated, and there is no good reason—if it were not for their general antipathy to manual labor and their dependence for subsistence upon the issue of rations, their semiannual per capita payment, and rental derived from leasing allotments to white men—why they should not in time become a self-supporting people.

From reading published official reports, I came here with the belief entertained by so many who are not really acquainted with the true conditions, that I would find almost the entire male adult population occupying and cultivating their own allotments. I regret very much to report that I do not find such a satisfactory condition. I have visited every farming district of the agency, ten in number, and from personal observation, together with data furnished by the farmers in charge of the districts, I am positive that the number of male adults who are actually occupying and cultivating their own lands will not exceed 15 to 18 per cent of the entire male adult population. This, of course, is very disappointing and rather discouraging. I can only hope that at the end ot the next fiscal year I will be able to report a more favorable condition of affairs.

Of the few who have attempted farming for themselves, some have done very well indeed, and deserve much praise. I mean those who have done their own work, and not those who have hired white help.

The season has been a very favorable one, and considerable crops have been raised by those who have farmed, yet much of the work attending the raising of the same was done by hired help.

These Indians have $1,000,000 to their credit in the United States Treasury, which draws interest at the rate of 5 per cent per annum. This interest is paid to them per capita semiannually.

During the fiscal year there was collected as rentals of allotments to white farmers and cattlemen, $42,120.83.

The prices at which raw land is being leased for farming purposes range from 25 cents to 50 cents per acre, owing to its locality and quality; for grazing 20 cents per acre. Many of the first leases made in 1895 will expire this year, when all the broken land will be leased at about a $1 an acre. This, of course, will bring in considerable more revenue than has been received in the past. Each able-bodied male adult is required to reserve one home allotment, and my aim will be to get them to occupy and improve the same.

On the one hand, these Indians are considered wards of the Government; on the other, citizens. It has been beyond me so far to draw the line where the one leaves off and the other begins. The Indians are supposed to be amenable to the Territorial courts and have the same protection from the same accorded to the other citizens, but I fear they fail to get it; they are treated as legitimate prey and have little show in the lower courts. These Indians, like so many others, have had citizenship thrust upon them when they are so fearfully unprepared for it.

The schools have been quite successful, notwithstanding the fact that the attendance was not what it should have been. It is expected to materially increase the attendance if pupils can be found.

WOODS COUNTY FRUIT, GROWN IN FIVE YEARS FROM THE RAW PRAIRIE.

The children have enjoyed exceptionally good health, and there is every reason to believe that the ensuing session will be productive of even better results than the last.

This has been a splendid crop season throughout the Territory. The agency farm has yielded a sufficient amount of forage to subsist all the stock, and will have enough to sell to materially assist in keeping up the expenses of the agency in the way of farming implements, wagons, horses, etc.

There have been harvested, 6,000 bushels of wheat, 6,000 bushels of oats, 150 bushels of rye, 5,000 bushels of corn, and 150 tons of hay.

KIOWA AGENCY.

Col. James F. Randlett, United States Indian agent, writes as follows relative to the tribes and their progress:

The agency is at Anadarko, on the Anadarko branch of the Chicago, Rock Island and Pacific Railway, which runs from Chickasha, Ind. T., across the reservation, to Mangum, in Greer County, Okla. The Wichita Reservation, inhabited by the Wichita and affiliated Indians, is also under the supervision of this agency.

The Kiowa, Comanche, and Apache Reservation is inhabited by three tribes of same names respectively as the reservation. It is bounded on the north principally by the Washita River, on the the east by the ninety-eighth meridian, or Indian Territory, on the south by Red River and on the west by the North Fork of Red River. This reservation comprises an estimated area of 3,000,000 acres.

The Fort Sill Military Reservation is located in the central part of this Indian reservation and comprises an area of 50,000 acres, set apart by the consent of the Indians and Executive order for military purposes. It is garrisoned at the present time by one troop of the Eighth Cavalry and is commanded by Capt. Farrand Sayrs, of the United States Cavalry Corps.

The Wichita Reservation, estimated as containing 750,000 acres, is bounded on the north by the South Canadian River, on the east by the ninety-eighth meridian, on the south by the Washita River, and on the west by the Cheyenne and Arapaho Indian lands. It is inhabited by the Wichita, Caddo, Delawares, Towakoni, Keechis, and Waco.

At this date it is impracticable, for the reason that all the agency district farmers have not completed their reports, to give any definite statement in regard to the agricultural work performed by Indians during the year ending June 30, 1900, or of their progress in stock raising. It is known, however, that during the past year more Indians have personally engaged in farming than in former time. It is thought that the success met by the Indians who farmed during the present crop year—the rainfall having been generally favorable—will encourage many other Indians to follow their example.

I assumed charge of the affairs of this agency on July 1, 1899, and since that time I have been gratified to see that the Indians have made much progress in all the ways which lead to ultimate civilization.

Schools and missions.—The Government has provided and well equipped three boarding schools for the Indian children of this agency. The Riverside school is situated on the Wichita Reservation, about 1½ miles distant from the agency. The Rainy Mountain school is 40 miles west of the agency, and the Fort Sill school is some 38 miles south of this place. The present capacity of each of these schools is 150 pupils, while, with a few additions which it is thought the Department will furnish during the present fiscal year, the Riverside and Fort Sill schools can comfortably accommodate 200 pupils each. Besides the Government schools there are four mission schools upon the reservations under this agency, with capacity from 40 to 100 pupils each. During the past school year all these schools were filled, and it was found necessary at some of the plants—notably at Fort Sill—to turn away children who made application for admittance. The work of superintendents and employees of the Government schools was of the highest character and deserving of commendation,

The work of the mission schools and mission workers on the reservation is worthy of special mention, the Roman Catholic and another, the Southern Methodist, being located within 2 miles of Anadarko. The first named was founded by Miss Kate Drexel and is superintended by Rev. Father Ricklin, who, with a competent corps of teachers from the order of St. Frances, has succeeded in establishing a plant that reflects credit upon all concerned. It has a capacity for the accommodation of 75 pupils and was filled during the past year.

The Methodist Mission, close by, is superintended by the Rev. J. J. Methvin. It is the oldest of the mission schools and has been abundantly successful. This school has a capacity for 80 pupils and has been filled during the past year. Both these school plants are admirably conducted and have been of lasting good to the Indians of the reservations. Too much credit can not be given for the management of these institutions.

The Presbyterian Mission, known as the Mary Gregory Memorial School, is located 4 miles below the agency on the road to Chickasha, a town in the Indian Territory on the Chicago, Rock Island and Pacific Railway, from which town the mission is 12 miles distant. It is under the superintendence of the Rev. S. V. Fait. This plant has a capacity for the accommodation of 50 pupils and was filled the past year. It is admirably conducted and promises well for the future.

The Reformed Presbyterian Church has a mission, known as the Cache Creek Mission, located about 25 miles southwest from the agency. It has capacity for the accommodation of 50 pupils and is well filled. This mission, which is in charge of Rev. W. W. Carithers, has been successful in school work and is considered an advantage to the Indians who live in the neighborhood of its location.

Besides the mission schools established by Christian churches for the benefit of the Apache, Kiowa, and Comanche Indians there are 15 missionaries working on the reservation under the patronage of various religious denominations. The Episcopal Mission at Anadarko is under the superintendence of Miss Ida A. Roff, whose efforts are confined principally to the art of needlework, which she teaches in class room. Most of her pupils are women of the Wichita Reservation. Miss Roff has been successful to a marked degree, some of the work of her pupils being considered as marvelous productions, which find immediate sale at extravagant prices among rich people of New York City.

The Wichita and affiliated Indians are without any help from Christian workers except that which their women receive from Miss Roff.

Population.—The following table gives the number of Indians of all the tribes under this agency on June 30, 1899, and the number on June 30, 1900:

	June 30, 1899.	June 30, 1900.	Increase.	Decrease.
Comanche	1,490	1,500	10	
Kiowa	1,074	1,139	65	
Apache	176	172		4
Wichita, etc	956	935		31

The net gains for the tribes under the agency during the year was 40.

Allotments.—The act of Congress approved June 2, 1900, provides for the allotment of lands in severalty to the Indians of the Kiowa, Comanche, and Apache Reservation, 160 acres to each Indian. The allotting agents are now upon the ground executing the preliminary work in this matter. The Comanches and Apaches seem to be reconciled to take their allotments, and I anticipate that no delay in the work will be occasioned by them. The Kiowas do not accept the conditions so contentedly, but no trouble is anticipated from that source. It is believed that when the Comanches have been served the Kiowas will be ready to accept cheerfully the provisions of the law. During the last year over one hundred houses have been constructed for the Indians, and in every case the Indian to whom lumber was furnished for the purpose asserted that the location he had chosen for his house was where he would elect to have his allotment should Congress pass an allotment act applying to this reservation. Provisions have been made for the construction of fifty additional houses for dwellings for the Indians to be constructed this fall. The Indians who have deposited the money for the work of constructing their houses have signified their desire to have their houses located upon the lands they have chosen for purpose of establishing themselves in homesteads.

Habits of the Indians.—All Indians of the reservations are classed as peaceable and law-abiding. Occasionally an Indian is caught appropriating to himself property belonging to a friend or relative, but this rarely occurs. None have ever been known to steal from white people, or molest the whites in the enjoyment of any privileges accorded to them on the reservations. They are entirely free from the drink habit, and drunkenness is so rare that but two cases have been discovered during the past fifteen months. This fact existing among a population of 4,000 Indians is thought worthy of note. These Indians have made some progress in farming and a large number of them are inclined to be progressive and appear ambitious to become settled in homesteads furnished with civilized comforts. As a rule, they will work when profitable results appear attainable. They are regarded as well disposed toward white people and among them no social disturbances of serious nature are ever experienced.

Minerals.—Much excitement has recently been instigated by schemers, who have advertised that the Wichita Mountains abound in gold and precious stuff, and immediately after the passage of the act of June 6, 1900, providing for the opening of the reservation, hundreds flocked into that mountain range and placed their location stakes. Many remained long enough to dig considerably among the rocks, but no one is known to have discovered anything assaying any more than dim traces of what they have sought to find. It is understood that several fake mining corporations have been organized, but no evidence has yet appeared as justification of the advertising the mountain range has received as a place of mineral deposit.

INDIAN RESERVATIONS.

There has been no change in the Indian reservations of Oklahoma during the past year, and there are still within the Territory lands in Indian reservations as follows:

	Acres.
Kansas	100,137
Kiowa and Comanche	2,968,893
Osage	1,470,068
Otoe	129,113
Ponca	26,328
Wichita, etc	743,610
Total	5,438,139

The Wichita and Kiowa and Comanche lands have been treated for and are soon to open, and will likely be the last great opening of lands in the southwest, as the other reservations, except the Osage, are small and will be mostly taken by allotments. The Osage tribe own their reservation in fee simple, and it seems likely that when they take their allotments they will sell the balance of the land themselves.

The passage of the act by Congress approved June 6, 1900, ratifying the treaty with the Kiowa, Comanche, and Apache Indians, and providing for the opening of their reservation to settlement within a year from that date, has attracted much attention to that country, and the mail of the executive office is daily loaded down with inquiries about the reservation and the opening, coming from every State and Territory in the Union, and even from foreign countries. So great is the interest manifested at this early day that I am led to believe that the rush into that country when it opens to settlement will be even greater than the many remarkable races for homes in the other portions of the Territory.

The Kiowa, Comanche, and Apache Reservation lies in the southwestern part of the Territory, is about 60 miles square, and contains 2,968,893 acres of land.

The treaty with the Indians and the law ratifying the same provide that before the reservation is open to settlement land shall be deducted as follows:

	Acres.
Fort Sill Reservation	60,000
Agency reservations, about	3,000
School and church reservations	1,600
Indian pasture	480,000
Indian allotments	464,000
School and college lands	329,877
Special allotments	3,840
Total reserved	1,340,317

This will leave 1,614,076 acres for settlers. Of this probably one-fourth will be mineral or waste lands, leaving about 8,000 quarter sections of desirable lands for settlers, the greater portion of them suited to general farming and stock raising.

For years the white people of the Southwest have looked upon this beautiful and picturesque reservation with longing eyes, and the zealous manner in which it has been guarded by the Indian agents and the Indians has but served to increase the desire to possess what appeared to many to be a veritable land of milk and honey.

The rich bottom lands of the Washita Valley, producing magnificent crops of wheat and corn, the fertile lands bordering many other streams, the beautiful undulating plains stretching away to the Red River on the south and west, and the magnificent mountain parks indeed offer an inviting field for the agriculturist; but a thorough inspection of the entire reservation shows much land that is alone suitable for grazing, and much more that is absolutely waste, while many thousands of acres on the mountains will be absolutely valueless except for such minerals as may be found there. A careful examination of the land over a large portion of the reservation convinces me that about one-half of the land which will be left for settlers will be desirable farming land, the rest being suited for pasture and stock feed, with a considerable area of wholly waste land. The land that is suited for farming, however, is of the very best, and within a few years this reservation will be as thickly populated and as prosperous as any other portion of the Territory, producing crops of the many products so successfully grown throughout all Oklahoma.

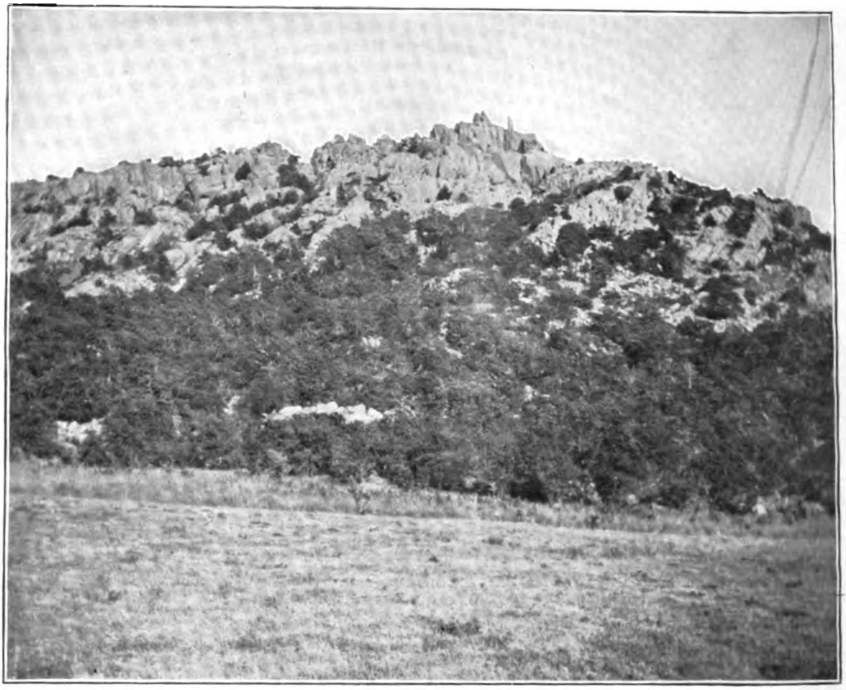
While there are rich valleys and beautiful parks scattered all over the reservation the largest bodies of uniform agricultural land lie east of a line passing north and south at the western limit of the Fort Sill Military Reservation. The northeastern quarter of the reservation contains much good land, but is somewhat broken by a chain of hills. The southeastern quarter is mostly undulating prairie, fertile and unbroken. The southwest quarter of the reservation is mostly high and rolling except in valleys of the Red River. Any of the upland will produce good crops of wheat, but much of this part is best adapted to pasture. In the northwest quarter is some of the very finest land in the valleys of the streams and in the parks of the Wichita Mountains, which occupy much of this portion.

The reservation is the best watered in the Territory. Large rivers bound it on three sides and hundreds of streams cross it in every direction. Most of the streams head in the mountains and are clear, pure, cool spring water flowing swiftly over beds of gravel and abounding in fish. There are hundreds of fine springs, several being among the largest in the West, and good water can be found anywhere at a depth of from 20 to 40 feet.

The rainfall is abundant in all parts of the reservation, the official record at Fort Sill showing an average fall of 30 inches for the past nine years. The climate is delightful and invigorating.

Buffalo, gama, bluestem, sage, and mesquite grass cover the entire reservation with a rich mat of green, making it the stock raiser's paradise, little shelter or feed beyond that provided by nature being needed. The reservation is fairly well timbered, all streams being lined with trees, and some quite extensive forests of oak and mesquite being found in the mountains, also walnut, persimmon, cottonwood, pecan, and some ash and cedar.

The greater portion of the Indians upon this reservation have built



A PEAK OF THE WICHITAS.

CORN AND CANE ON RANCH OF CHIEF QUANAH PARKER. SCENES IN THE KIOWA AND COMANCHE RESERVATION.

houses, made some few improvements, and, as they will in the majority of cases select their allotments where they have built, they will take up all of the Washita Valley and many of the other choicest portions of the reservation, with the best water and timber.

WICHITA MOUNTAINS.

The Wichita Mountains are gigantic piles of granite and other rock pushed up through the prairie in the northwestern portion of the reservation. They cover an area of about 12 by 30 miles in extent, and abound in fine springs, beautiful flowing streams, richest of valleys, and magnificent scenery. There have long been stories of rich mineral deposits in these hills guarded by the Indians. There have been reports of the discovery of traces of old Spanish mines, and many claims of rich discoveries of mineral, but unfortunately none are well authenticated.

When it became known that the law ratifying the treaty extended the mining laws over the reservation many prospectors rushed in and though they were allowed to work unmolested several weeks none of them appear to have made any rich finds. It is certain that of the many who have prospected the streams none have found any pay dirt. There are veins of quartz in the mountains that promise well in both gold and silver, but time and capital will be required to develop them.

But whether the precious metals are found in paying quantity or not the mountains are rich in minerals, and the reservation is destined to become one of the most valuable sections of Oklahoma.

Early army officers who explored the country report indications of copper, cobalt, lead, zinc, and iron, and late investigation discloses the presence of all of these as well as beds of coal. Near Fort Sill are remarkable deposits of liquid asphaltum, and at several places it constantly oozes from the ground. There are several oil springs in the mountains and one from which natural gas constantly bubbles, while oil has been discovered at a number of places while digging for water. The finest of mineral springs abound and these mountains will at an early date be a noted health and pleasure resort.

The general altitude of the country about the mountains is 2,000 feet and the peaks rise from 300 to 1,000 feet above this, many of them great gigantic piles of granite with all the fantastic shapes and formations of cliffs, gorges, and precipices to be seen in the Rockies. The scenery in many places is equal to anything to be seen in the mountain States, and the view of the Wichitas from the Rock Island trains passing across the reservation is as beautiful as that of the Rockies from enver.

While thousands of people are looking toward this reservation and anxiously awaiting its opening, and I myself am most desirous of seeing its early transformation from a great cattle pasture into busy, progressive communities constituting several additional counties of the Territory, I can not but feel that unless the opening can come as early as April 1 it would be better to postpone it until fall, as it is a serious mistake for people to try to inaugurate any farming in a country so far south late in the spring. A spring opening much after April 1 will leave the people to get through a year and a half before they can have a crop to use or market, and in a new and untried country this means much hardship and suffering to the settlers.

WICHITA RESERVATION.

Much interest is also manifested in the Wichita Reservation which was treated for in 1891 and ratified in 1895, and it is desirable for the best interests of the Territory that the allotting of lands begun several years ago should be completed and the reservation opened at an early date. These lands which are designated as County I on the map, north of the eastern part of the Kiowa and Comanche country, are 743,610 acres in extent. The Canadian River bounds the reservation on the north and the Washita on the south, and numerous small streams traverse it throughout. The valleys are broad and fertile, and the uplands are rolling prairie; nearly all of which is suited to diversified farming. Cotton, cane, beets, potatoes, corn, wheat, melons, and all kinds of vegetables flourish equally well here, and when the land is opened settlers can obtain farms unexcelled anywhere in the United States. When the Indian allotments, school and college and waste lands, are deducted there will still be left about 2,000 farms for white settlers, the greater part of it excellent agricultural land.

STATEHOOD.

The Republican party conventions have repeatedly resolved in favor of statehood for Oklahoma, with such conditions and additions as Congress may deem best. The allied parties in opposition demand immediate statehood with Oklahoma and the Indian Territory as a single State. Both the Democratic and Republican national conventions promise statehood to Oklahoma in their respective platforms. It is therefore reasonably certain that in the near future Congress will pass an enabling act, and that Oklahoma will soon be admitted as a State.

The prosperous conditions prevailing in Oklahoma, her population, area, and wealth, as shown by the four annual reports which I have had the honor to submit to you, when compared with like conditions prevailing in a large number of States at the time of their admission into the Union, amply justify our claims for statehood.

We have a larger population to-day than either of the States of Delaware, Idaho, Montana, Nevada, New Hampshire, North Dakota, Utah, Vermont, or Wyoming. We polled a larger vote in 1896 than either of the States of Delaware, Florida, Idaho, Montana, Nevada, North Dakota, Rhode Island, or Montana. We have, as now organized, a larger area than any of the following-named States, viz, Connecticut, Delaware, Indiana, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Rhode Island, Vermont, or West Virginia.

The actual wealth of Oklahoma is not less than $135,000,000, the assessed valuation of taxable wealth for the year 1900 is more than $49,000,000.

The following table shows the amount of actual and assessed wealth of several of the States at the date of their admission, statistics as to the other States not being obtainable here:

State.	Actual wealth.	Assessed wealth.
Wisconsin	$42,000,000	$31,200,000
Arkansas	39,000,000	23,400,000
Florida	23,000,000	13,800,000
Iowa	24,000,000	13,200,000
Oregon	19,000,000	11,400,000
Minnesota	52,000,000	32,067,730
California	22,000,000	13,296,000
Kansas	31,000,000	22,500,000
Oklahoma	125,000,000	49,000,000

The census of 1890 shows the population of Oklahoma to have been 61,834. A conservative estimate of present population is very close to 400,000.

The following table shows the population of twenty-two States at the time of their admission and at the preceding and following census:

State.	Date of admission.	Representative ratio on previous census.	Population by previous census.	Estimated population when admitted.	Population by following census.
Vermont	1791	33,000	80,213	85,425	154,446
Kentucky	1792	33,000	70,109	73,677	220,955
Tennessee	1796	33,000	58,218	67,000	105,602
Ohio	1802	33,000	45,365	46,365	230,760
Louisiana	1812	35,000	70,017	76,556	152,923
Indiana	1816	35,000	60,074	63,879	147,178
Mississippi	1817	35,000	40,352	55,512	75,448
Illinois	1818	35,000	35,220	38,620	55,162
Alabama	1819	35,000	67,901	127,901	127,901
Missouri	1821	40,000	66,586	67,557	140,444
Arkansas	1836	47,700	30,338	52,240	97,574
Michigan	1837	47,700	31,699	65,000	212,267
Florida	1845	70,680	54,477	64,000	87,445
Iowa	1846	70,680	43,112	78,819	192,214
Wisconsin	1848	70,680	155,270	180,000	305,391
California	1850	93,423	92,597	92,597	379,994
Minnesota	1858	93,423	68,812	120,000	172,023
Oregon	1859	93,423	52,170	60,000	62,405
Kansas	1861	127,381	107,206	107,206	364,399
Nevada	1864	127,381	6,857	40,000	42,491
Nebraska	1867	127,381	28,841	100,000	122,993
Colorado	1876	131,425	39,864	100,000	194,646
Average for 22 States	....	....	59,103	77,380	....

These figures show that Oklahoma has five times the average population, and the enumeration of school children in the Territory for 1899 was greater than the population of twenty of the States at the time of their admission into the Union.

The following table of figures shows the vote cast at Presidential elections and the number of years after their admission of twelve prominent States:

State.	Years after admission.	Votes cast.
Tennessee	28	20,725
Indiana	8	15,725
Illinois	10	8,344
Missouri	15	5,192
Mississippi	15	5,007
Arkansas	4	11,209
Louisiana	28	18,914
Florida	3	4,963
Texas	8	15,177
Iowa	8	24,303
Oregon	14	14,649
Nebraska	2	15,168
Average	10	13,133

Oklahoma in 1896 cast 53,000 votes.

The citizenship of Oklahoma is very largely composed of intelligent and educated people, American born and raised in the various States about us, who know the obligations and are willing to assume the full responsibilities of statehood.

Respectfully submitted.

C. M. Barnes,
Governor.

The Secretary of the Interior,
Washington, D. C.

THE CAPITOL.

REPORT

OF THE

GOVERNOR OF THE TERRITORY OF HAWAII

TO THE

SECRETARY OF THE INTERIOR.

EXECUTIVE CHAMBER,
Honolulu, Territory of Hawaii, September, 1900.

SIR: I have the honor to transmit herewith, in response to your letter of July 7, my report of the affairs, progress, and development of Hawaii, covering the period from July 7, 1898, the date of the approval of the "joint resolution to provide for annexing the Hawaiian Islands to the United States," up to April 30, 1900, the date of the approval of the "act to provide a government for the Territory of Hawaii," and thereafter.

As the 7th day of July, 1898, came in the midst of the biennial period, I am not able to furnish exact reports from that date, but have endeavored to cover as closely as possible the period from that date to the 30th day of June, 1900.

The brevity of the time available for preparing this statement has not allowed an opportunity for making it as full as I should like.

POPULATION.

The last Hawaiian census, which was taken in the year 1896, gives a total population of 109,020.[1]

The following table gives a comparative statement of the nationalities and sexes:

Nationality.	Male.	Female.	Total.
Hawaiians	16,399	14,620	31,019
Part Hawaiians	4,249	4,236	8,485
Americans	1,975	1,111	3,086
British	1,406	844	2,250
Germans	866	566	1,432
French	56	45	101
Norwegians	216	162	378
Portuguese	8,202	6,989	15,191
Japanese	19,212	5,195	24,407
Chinese	19,167	2,449	21,616
South Sea Islanders	321	134	455
Other nationalities	448	152	600
Total	72,517	36,503	109,020

---

[1] The preliminary statement of the population of the United States accompanying the annual report of the Director of the Twelfth Census shows the population of Hawaii for 1900 to be 154,001.

The results of the Federal census taken this year have not been published; I am therefore unable to obtain any information therefrom.

TAXATION.

.During the last biennial period the taxable property subject to ad valorem assessment was as follows:

Taxable property.	1898.	1899.
Real estate	$26,820,279	$38,459,370
Personal estate	26,662,105	37,707,602
Total	53,482,384	76,166,972

Receipts from taxes 1898	$811,818.67
Receipts from taxes 1899	1,065,326.40
Estimated receipts from taxes 1900	1,341,649.99

Valuation of real and personal property subject to ad valorem assessment in 1900:

Real estate	$45,620,185
Personal estate	51,871,399
Total	97,491,584

Taxes are assessed on these classes of property at the rate of 1 per cent ad valorem.

Vehicles of various kinds are subject to special taxes. In 1899 there were 7,320 carriages and 7,721 carts and drays in the Hawaiian Islands.

LICENSES.

License fees are collected on licenses for selling methylated spirits and alcohol; stock and share business; selling awa; auction; banking; billiards and bowling (public); boats and boatmen (public); slaughtering and selling beef; slaughtering and selling pork; commercial travelers; to hunt with firearms; livery stables, lodging houses, hotels, boarding houses, and restaurants; selling merchandise; selling milk; notaries public and agents to take acknowledgments; peddling cake; selling poisonous drugs; public shows; selling salmon; selling tobacco, cigars, and cigarettes; vehicles and drivers (public); coasting trade; carrying passengers between the islands; marriage; peddling foreign goods; importation of live stock; kerosene for fuel and mechanical purposes; pawnbrokers; medicine and surgery; dentists; spirits, wholesale dealers; retail—wine, beer, and ale; steam laundry; shipping masters; and breweries. It is probable that the merchandise licenses are inconsistent with the Federal laws relating to interstate commerce and that new legislation will be required to place such licenses upon a legal basis.

REVENUES.

Current revenue:	
1898	$2,568,489.12
1899	3,345,231.50
First 6 months 1900	1,286,579.29
Loan receipts:	
1898	141,000.00
1899	509,000.00

COCOANUT ISLAND, HILO.

SETTLEMENT AND DISPOSITION OF LANDS.

In the following tables the words "Olaa reservation," "Homesteads," "Time payment agreements of sale," "Puukapu reservation," "Right of purchase leases," "Special agreements," "Cash freeholds," and "Homestead leases," refer to the various methods of land settlement in small holdings, based upon conditions of residence and improvement, and, in all cases except "Homestead leases," some money consideration.

Land patents (grants), 1898–99.

	1898.			1899.		
	Number.	Area.	Value.	Number.	Area.	Value.
Olaa Reservation	36	5,017.80	$19,672.56	56	6,839.41	$24,187.53
Homesteads	78	1,267.57	9,973.35	29	498.47	8,016.10
Time-payment agreements of sale	21	1,675.42	7,409.46	14	1,151.07	5,921.00
Cash purchases	14	201.665	10,063.10	12	502.734	17,598.50
Exchanges	4	16.90	4.00	8	15.73	275.00
Perfecting title	1	290	150.00	1	.04	45.00
Equitable settlement	2	21.12	50.00			
Puukapu Reservation	2	40.17	100.42			
Total	158	8,580.645	47,422.89	115	9,007.454	51,048.18

Agreements, leases, etc., public lands office, 1898–99.

	1898.			1899.		
	Number.	Area.	Value.	Number.	Area.	Value.
Right-of-purchase leases	72	3,906.27	$31,654.32	42	3,323.65	$15,877.32
Special agreements	16	1,077.01	12,153.05	37	803.56	5,236.00
Cash freeholds				4	67.82	169.54
Homestead leases	19	296.30		32	850.01	
Total	107	5,279.58	43,807.37	115	4,545.04	21,282.86
Cash purchases	9	245.14	17,205.50	5	379.10	7,603.50
Compromise and equitable settlement	2	437	550.00			
Total	11	682.14	17,755.50	5	379.10	7,608.50

GENERAL LEASES.

	1898.	1899.
Number of leases	15	5
Area	25,806.93	3,031.98
Annual rental	7,187.00	2,082.00

SPECIAL LAND LICENSES.

Number of licenses, 1898	2
Annual rental, 1898	600

In consequence of President McKinley's order of September 11, 1899, discontinuing further disposition of public lands, there are no transactions to report for the first six months of 1900.

During 1898 and 1899 there were but three sales of land under the control of the minister of the interior, aggregating 1,448 acres and $2,845 consideration, and 16 leases of business lots upon conditions of improvement under act 7, laws of 1896, aggregating an annual rental of $11,025.

AGRICULTURAL DEVELOPMENT.

SUGAR.

The sugar industry has been greatly stimulated by annexation. In the year 1899 there were 58 plantations, 55 of which had their own reducing plants. There was also one mill which reduced the cane produced on neighboring plantations. Nine of these plantations may be credited to the stimulus to the sugar industry caused by annexation and two are large developments of small plantations due to the same cause. Several of these new enterprises have been given up or suspended for a time for various causes, among which uncertainty of water supply for irrigation and stringency of the money market may be regarded as the most influential.

The value of sugar exported for 1898, 1899, and the first six months of 1900 has been as follows:

1898	$16,614,622.53
1899	21,898,190.97
First half 1900	14,770,546.76

Sugar estates have paid taxes for 1898 and 1899 as follows:

1898	$237,527.89
1899	396,887.73

RICE.

Rice is raised almost entirely by Chinese and is cultivated in wet land with the ground covered by water until the grain begins to ripen; the water is then drawn off, and by the time the crop is ready to be harvested the ground is firm under foot and nearly dry. The crop is harvested with sickles and the paddy is threshed out on threshing floors, generally made of cement, by driving loose horses over the sheaves. Two crops are raised in each year.

The paddy is hulled and the rice polished and graded mainly by machinery, the larger plantations having complete plants of their own for this purpose.

A considerable portion of the product is consumed locally.

The value of rice exported for 1898, 1899, and the first six months of 1900 has been as follows:

1898	$149,278.14
1899	42,562.00
First six months 1900	2,300.00

Rice plantations have paid taxes for 1898 and 1899 as follows:

1898	$12,142.62
1899	14,544.09

COFFEE.

During the past ten or twelve years the cultivation of coffee has developed to a considerable extent.

In the years between 1850 and 1860 several large coffee plantations were carried on at low elevations. They were eventually attacked with blight and given up. From that period till near 1890 little was done in the cultivation of this product. It, however, became a wild plant, growing through the woods in many localities. In Kona, on the island of Hawaii, there was a widespread growth of wild coffee, which was, doubtless, extended by the natives by desultory planting, but which received no other attention except the harvesting of the annual crops of berries. For many years, up to the present time, the natives of that locality were accustomed to pick and prepare for the market this yield, and it was to them a regular and substantial source of income. The wild coffee was seldom attacked by blight of any kind, and the quality of the yield was good. It is even now argued by some of those engaged in the cultivation of coffee in Kona that it pays better to let the coffee grow wild, substantially crowding out weeds by being allowed to grow close together, and thus covering the ground, than to cultivate it.

Within the last three years the confidence of coffee growers has been much shaken, and on many plantations the cultivation of sugar has been substituted for that of coffee. This is due to various causes. The Olaa coffee region has experienced the greatest development of coffee cultivation in recent years, and more recently the greatest discouragement. Olaa has a large rainfall throughout the year. This appears to interfere with the proper fertilization of the flowers by soaking the pollen with water, with the result that with a healthy and luxuriant growth of the trees there is often a partial failure of the crop. In other parts of the district of Puna, in which Olaa is situated, the trees have suffered from some unknown cause, which has turned the foliage yellow and prevented production.

At the present time low prices are causing some discouragement, but there is no good reason to believe that coffee cultivation must cease to be profitable. Many have made and are making it pay, and it seems probable that with better cultivation and greater attention to the marketing of the product the business may be placed on a more substantial basis.

The Hawaiian coffee is of a fine quality, and when well established in any market is much liked and brings good prices.

The area of coffee cultivation in 1897 was, approximately, 6,154 acres, classified as follows:

	Acres.
Trees in bearing	1,345
Trees from 1 to 3 years old	3,007
Newly planted trees	1,802
Total	6,154

In 1898 the area under cultivation had increased, approximately, to 8,888 acres, classified as follows:

	Acres.
Trees in bearing	2,440
Trees from 1 to 3 years old	3,831
Newly planted trees	2,617
Total	8,888

Recent exports of coffee have been as follows:

1898	$115,944.89
1899	132,347.43
First half 1900	49,553.45

BANANAS.

This fruit has been profitably exported to the mainland for many years from Honululu. With regular steam communication between the island of Hawaii and the mainland, a large export from that island would undoubtedly grow up.

The value of bananas exported for 1898, 1899, and the first six months of 1900 has been as follows:

1898	$66,580.91
1899	84,268.82
First six months 1900	9,317.00

The export for this last period was disastrously interrupted by the prevalence of the bubonic plague in Honolulu and the consequent quarantine regulations.

PINEAPPLES.

Pineapples have been raised for export for a number of years. One canning factory was started on Oahu several years ago, but the high American duties caused the enterprise to be suspended. There is hardly a limit in the Territory to the possible production of this fruit and bananas. A variety of the pineapple long grown on the islands, and commonly known as the native variety—probably an early introduction from Mexico—grows wild in several localities and is of fine quality.

The export of pineapples in 1898, 1899, and the first six months of 1900 was valued as follows:

1898	$14,485.60
1899	14,629.61
First six months 1900	10,781.11

TARO.

This vegetable is to the Hawaiians their staff of life. It is a large tuber, and is generally cultivated in wet land which can be flooded or drained at will. A year, more or less, according to variety and locality, is required for maturing the crop. The yield is large and the cultivation profitable.

The plant has been attacked in recent years by insect blights of several kinds introduced from abroad.

The product is locally consumed, except a small export of taroena, a desiccated preparation of the root.

TOBACCO.

Tobacco grows wild in parts of the group, and is cultivated by the natives and Chinese. The Hawaiian tobacco is a large, coarse variety and has never been properly cured. Improved varieties have been tried experimentally and have produced well. Sufficient quantities, however, have not been grown for experiments in curing; the commercial values of the different varieties raised is therefore unknown.

MISCELLANEOUS PRODUCTIONS.

Nearly all edible vegetables can be produced of good quality from the sea level to over 2,000 feet elevation; some doing better low down and others high up. Certain vegetables, like cauliflower and celery, seem to require the cooler climate of elevated places.

Maize grows to perfection from the sea level to over 2,000 feet elevation. The same is true of the majority of forage plants. Wheat, oats, and barley do well, but the wheat product is of too poor a quality to compete with imported flour. None of these grains are cultivated at the present time, except perhaps in a small way as forage.

HAWAIIAN WOMAN.

Hay can be easily raised, but owing to the liability of rain in the localities where it can be grown, it is liable to be spoiled in the curing process. There are some localities where it could be safely cured if it could be raised with the assistance of irrigation. Irrigation, however, is too valuable in the raising of more profitable crops, such as sugar and rice, to allow it to be used in growing hay.

Experiments already made would justify the belief that nearly all foreign grasses will do well over a wide range of elevation, and will stand grazing.

Of the fruits of temperate climates, it is fairly well established that apples and some of the berries will thrive and bear at the right elevations. I do not think that this is settled as to the other northern fruits, although pears have been known to produce fruit.

The peaches that can be successfully produced are an oriental variety, which has been cultivated here for fifty years, and the Ceylon peach, which has been brought from Florida and cultivated for perhaps ten years.

It has been found difficult to raise some of the tropical fruits in these islands that belong to the extremely tropical regions—as Java, Sumatra, and similar localities; yet both the durien and the mangosteen have been produced on the island of Kauai, the trees, as I understand, producing regular annual crops.

Native fruits are limited as to kinds. The banana stands at the head as to importance, with several well-marked varieties. It is easily raised and is delicious for eating, both raw and cooked. The banana used for export is an exotic, generally called the "Chinese banana." It bears large bunches on low plants, so well provided with roots that neither the weight of the bunch nor the high winds will prostrate it, whereas the indigenous varieties are easily blown over. The Chinese banana ripens well if cut green, and is unsuitable for cooking.

Except the banana and pineapple little has been done in the way of raising fruit for profit. The natives in Kona raise quite a quantity of seedling oranges of fine quality, many of which are brought to Honolulu and sold. Little attention, however, is paid to the cultivation of oranges, and the fact that oranges of such excellent quality are produced from trees substantially in a wild state promises well for the future of the Hawaiian production of this fruit.

The establishment of an experiment station here is desirable. Such an enterprise could not fail to be of vast benefit to the small farming interests of this Territory. If such stations were located at places where they might be conveniently visited by those interested in the experimental work, the results of such work would, it seems to me, better and more forcibly reach those whom it is desired to reach than in any other way. Free monthly bulletins would be very useful and would reach many who could not often visit the stations.

LIVE STOCK.

This business in times past has been carried on in a haphazard way, the natural grasses and forage plants of the country having been generally relied upon for food for live stock, but little attention has been paid to the cultivation of forage plants. A few stockmen have, however, endeavored, with some success, to establish new pasture grasses. Alfalfa and sorghum have been cultivated to some extent for feeding to dairy cows.

The increased demand for land for agricultural purposes, together with the spread of the lantana shrub, has tended to diminish the acreage of pasture lands. This condition, with the increased demand and consequent improvement in prices of beef, mutton, and dairy products, has begun favorably to influence the character of the stock-raising business. Greater attention is being paid on some ranches to the improvement of pasturage by dividing up the land into paddocks, and by the introduction of new forage plants. There is also an increased interest shown in the improvement of herds through the importation of improved breeds.

At the present time the home product of beef, mutton, and butter is insufficient to supply the local demand and large importations of these articles are regularly made. This is mainly in consequence of a larger demand caused by increase of population.

The importation of butter in 1898 was valued at $44,873.75, of butterine at $12,041.50, and of cheese at $18,834.49.

The following table gives the number of Hawaiian cattle and sheep consumed in Honolulu from 1895 to 1899, inclusive:

	1895.	1896.	1897.	1898.	1899.	Total.
Cattle	7,681	7,373	8,225	9,115	8,651	41,045
Calves	1,551	1,570	1,852	1,815	1,528	8,316
Sheep	7,696	7,478	8,316	10,698	13,220	47,808

The exportation of wool in 1899 was 307,551 pounds, valued at $26,678.98.

The average weight of 7,480 beeves from fourteen ranches, classed as large ranches, consumed in Honolulu in the year 1899 was 423 pounds.

The business of raising horses is carried on in a desultory way except in three or four ranches. The majority of ranches that raise them at all do so for their own use. A few thoroughbred and well-bred stallions have been imported from time to time for breeding purposes. There is a considerable importation of carriage horses from California for local use. Home-bred horses are, as a rule, hardier than those which are imported.

FORESTS AND THE PRODUCTION OF LUMBER.

A great variety of indigenous trees exist in the Hawaiian forests, which generally occupy the higher elevations below the frost line. A majority of the large trees belong to the class of hard woods, there being no varieties which are used as house lumber, although many kinds of trees were formerly used by the natives in the construction of the framework of their grass houses.

Much of the large timber is suitable and has been used to a considerable extent for bridges, cart bodies and wheels, shipbuilding and piles.

The wood of the koa tree (acacia koa) is used for furniture and the interior finishing of houses. It is a beautiful wood, taking a high polish.

The Hawaiian canoe is generally made of koa timber, being hollowed out of one piece, with the sides and ends raised by sewing on a strip of wood, generally of another kind.

Several varieties of exotic trees have been introduced and have materially assisted in adding to the diminishing forests. Eucalyptus trees figure prominently among these. The algeroba tree (Prosopis juliflora or P. dulcis) was introduced many years ago and has become an important acquisition to the Hawaiian forests, inasmuch as it prefers low and dry lands where other trees will not grow. This tree now covers thousands of acres of land that were once of little value, promoting the growth of herbage by its protection and affording a vast quantity of food for live stock from the sweet pods that it produces in the driest time of the year. The timber of this tree is also valuable for piles, as no marine borer will touch it if it is used green. The algeroba furnishes a large proportion of the firewood used in the islands.

The Government has for several years past planted forests in the neighborhood of Honolulu.

The indigenous forests have diminished during the past half century to an alarming degree, and are now rapidly disappearing in some localities. This is generally ascribed, correctly, I believe, to the prevailing custom of pasturing cattle in forest lands.

There is great need for a trained forester who can advise the Government in regard to the protection of forests and their extension; also upon questions of permitting certain lands to be deforested for settlement and agricultural purposes.

CORPORATIONS.

Corporations in existence to June 30, 1900.

Religious and benevolent	36
Mercantile	168
Agricultural	175
Telephonic, telegraphic, and cable	13
Railways	7
Cemeteries	3
Clubs and lodges	9
Total	411

In 1898 forty corporations for mercantile, manufacturing, agricultural, or investment purposes and one for benevolent purposes filed articles of association. In the same year 8 corporations obtained amendments to their charters and 4 were dissolved.

In 1899 forty-nine corporations for mercantile, manufacturing, agricultural, or investment purposes, 2 for railroads, and 5 for religious or charitable purposes obtained charters. In the same year 15 amended their charters and 2 were dissolved.

In 1900, from January 1 to June 14, twenty-one corporations for mercantile, agricultural, manufacturing, or investment purposes and one for church purposes obtained charters. In the same period 9 corporations obtained amendments to their charters.

RAILROAD ENTERPRISE.

EXISTING RAILROADS.

The Kohala Railroad, in the district of Kohala, on the island of Hawaii, about 20 miles long; the Kahului Railroad, in the districts of Wailuku and Makawao, on the island of Maui, about 11 miles long; the road of the Oahu Railway and Land Company, on the island of Oahu, running from Honolulu through the districts of Ewa, Waianae, and Waialua into the district of Koolaupoko, 71.7 miles long.

There are also a number of private railroads on the sugar plantations, used for conveying laborers to and from the various cane fields and carrying sugar cane from the fields to the sugar mills.

The Oahu Railway and Land Company completed an extension of 15 miles to Kahuku in December, 1898, and built 2 miles of main line on a new location and the Aiea branch, 1.3 miles, in 1899. The length of the main line from Honolulu Harbor to Kahuku is 71.7 miles. The gage is 3 feet. The rails weigh 48 pounds per yard.

Equipment added from July 7, 1898, to July 1, 1900: Two thirty-ton consolidated locomotives; 2 thirty-two-ton ten-wheel locomotives; 51 thirty-ton gondola cars; 20 ten-ton flat cars; 3 stock cars; 10 ten-ton box cars; 60 thirty-ton box cars; 10 passenger coaches; 1 observation car.

	Miles in operation, main line.	Passenger earnings.	Freight earnings.
Six months ending—			
June 30, 1898	33.7	$22,832.45	$61,758.74
December 31, 1898	56	36,426.55	90,476.35
Twelve months ending December 31, 1899	71.7	107,681.75	281,525.60
Six months ending June 30, 1900	71.7	34,107.65	206,215.63

Passenger trains were not running during the first four months of the year 1900, owing to the bubonic plague quarantine.

The Hilo Railroad Company was incorporated March 28, 1899, and entered into contract with the minister of the interior, in accordance with Hawaiian law, on April 18, 1899. The charter of incorporation is for a term of fifty years, and gives the right to construct, maintain, and operate a railroad or railroads for the transportation, as common carriers, of passengers and freight from the port of Hilo, island of Hawaii, to and through any other portions of the island of Hawaii. The capital stock of the company is $500,000, with the privilege of extension to $10,000,000. The company has authorized the issue of $450,000 worth of bonds, of which approximately $350,000 have been placed. The company owns and leases water-front land, and has constructed a wharf in the Wailoa River, communicating with the Hilo Harbor. It is now constructing a standard-gauge railroad from Hilo Harbor through South Hilo to the Olaa sugar mill, a distance of 7 miles from Hilo, and thence to the Puna sugar mill, in the district of Puna, a distance of 24 miles from Hilo. It is also planning to construct a branch road joining the main track at the Olaa mill and extending up through the Olaa district to a point 24 miles distant from Hilo. Ten miles of track are already completed, to wit, to the Olaa mill and 3 miles beyond. The contracts have been let for grading from the Olaa mill to the Puna mill, and the work is now in progress and the track being laid. It is expected that trains will be running through to Puna not later than the 1st of December. Trains to Olaa began running on the 5th of June last, and two round trips daily are now being made between Hilo and Olaa.

The company expects to in the future extend its road beyond the limits named, and the survey of the Olaa branch is already completed. No definite plans have yet been made for future extension. The railways now being built will give an aggregate length of 41 miles.

HAWAIIAN SCHOOLGIRL.

The ties, rails, locomotives, and all equipment consist of American material. The woodwork of the cars, both freight and passenger, is being constructed by the company itself in its own shops at Hilo.

The Kohala and Hilo Railway Company was incorporated on the 26th day of June, 1899, and entered into contract with the minister of the interior under the statute relating to the construction of railways in the Hawaiian Islands. The contract provides that a modern standard broad-gauge railway shall be constructed from the port of Hilo to and through the districts of Hamakua and Kohala to the port of Kawaihae or some other port in said district of Kohala.

The entire length of the road will be about 130 miles. The work of laying out the line of the road has been prosecuted, and notwithstanding interruptions caused by questions arising under the proclamation of the President disapproving of land transactions made after the act of annexation and from circumstances arising out of quarantine regulations relating to the bubonic plague, which prevailed in these islands during the past winter, the completed surveys of the road have been made to Laupahoehoe, 26 miles, and detailed maps and plans have been completed to Hakalau, 15 miles.

The capital stock of the company is three and one-half millions of dollars, and the company is sanguine that the road and its branches will all be completed and in working order within two years.

STREET RAILWAYS.

The Hawaiian Tramways Company, Limited, operates a street railway in the principal streets of Honolulu, the aggregate length of the lines being over 12 miles. The company was organized in 1887, the legislature having granted a franchise to use for its purpose certain of the principal streets of the city.

Its capital is $1,000,000, divided into 26,000 shares of $25 each, making $650,000, with an authorized debenture issue of $350,000. Of this capital, there has been issued and fully paid up 13,000 shares, making $325,000, together with a debenture issue of $150,000, bringing its working capital up to $475,000. The balance of the shares have already been subscribed for with a view of developing new lines, doubling those already in existence, and converting and altering its present mode of traction from animal to electricity. This development has already been commenced by the laying of 86-pound girder rail for its new double track. The electrical equipment has been obtained from the following well-known makers: Car bodies, Hammond & Co., of San Francisco; trucks, J. G. Brill & Co., of Philadelphia; generators and all electric requisites, The General Electric Company, of Schenectady, N. Y., who have undertaken to supply everything of the latest and best electric practice.

The company has 31 horse and electric cars. The fare is 5 cents except on its long Waikiki line, where a 10-cent fare is charged.

During the year 1899 a dividend of 5 per cent was paid, absorbing $16,250. The income for that year amounted to $141,396. The working expenses were $87,946.30.

The Honolulu Rapid Transit and Land Company was duly incorporated under the laws of the Hawaiian Islands on the 30th day of August, 1898, and has authority, under a special act of the legislature of the Republic of Hawaii, approved 7th July, 1898, and further approved by the President of the United States, on the 25th day of June, 1900, to construct, maintain and operate for thirty years a single or double track street railway in the district of Honolulu, including the city of Honolulu, with such motive power as the directors may determine.

The minimum capital of the corporation was fixed at $200,000, divided into 2,000 shares of $100 each, with the right to extend the same from time to time, upon notice to the territorial treasurer, by issue of new shares, not to exceed in all the sum of $2,000,000.

On the 18th of September, 1899, the capital was increased to $300,000 (of which $250,000 has been issued and paid up, leaving $50,000 in the treasury to be issued at a future date).

The usual powers to borrow money by the issue of bonds, secured by mortgage or deed of trust, to be used for the purpose of constructing and equipping the railway, and for other purposes, have been conferred upon the company by its franchise and charter.

A careful estimate places the cost of construction and equipment, including site, building, and machinery, at $600,000, $300,000 of which will be provided by the issue of stock ($250,000 having already been issued and paid), and $300,000 by the issue and sale of 6 per cent twenty-year gold coupons, with the privilege of redemption after ten years, secured by first mortgage on all of the company's franchises and property at present owned and to be acquired. This issue will be known as Series A, and is part of an authorized possible issue of $500,000. The remaining $200,000, if issued, to be used to purchase the franchise and property of other corporations having objects altogether or in part similar to the objects of this company, or to extend the tracks and equipment of the company.

The company is the owner of a very desirable power-house site containing upward of 2 acres, upon which the car barn, engine and boiler room, and offices are now being erected, all the necessary foundations, of most substantial character, having been completed. The overhead electric system has been adopted.

The company has purchased, at an expense of upward of $300,000, and has delivered or in transit the following material and equipment:

Three 340-horsepower tandem compound condensing engines of the Corliss type with necessary auxiliaries, including condensers and Green's fuel economizer; three 300-kilowatt generators, direct connected to engines; three 260-horsepower Babcock & Wilcox water-tube boilers; 35 cars of the most improved design, having a seating capacity of 32 to 40 persons each; 3,000 tons steel rails, 85 pounds to the yard, and accessories, wire and other overhead material, and cedar ties and poles. No. 0000 construction is being used throughout.

Construction of the roadbed will be begun during the month of September next and it is expected that at least 20 miles will be in operation before the end of the coming year. The system will extend through the business parts of the city and will reach all the suburban districts toward the north, east, and west, the south being toward the water front.

COMMERCE.

Imports:	
1898	$11,650,890.81
1899	19,059,605.79
January 1 to June 14, 1900	10,683,516.12

Exports:	
1898	$17,346,744.79
1899	22,628,741.82
January 1 to June 14, 1900	14,404,496.16
Customs revenues:	
1898	896,975.70
1899	1,295,628.95
January 1 to June 14, 1900	597,897.14

Imports, by countries.

	1898.	1899.	Jan. 1 to June 14, 1900.
United States	$8,695,591.63	$15,020,830.17	$8,709,822.43
Great Britain	1,287,726.67	1,774,655.52	903,026.86
Japan	351,324.98	673,410.50	303,188.19
Germany	352,043.65	384,102.88	100,538.60
China	328,851.87	384,522.00	67,995.79
Canada	283,383.40	113,480.63	99,708.03
Australia and New Zealand	198,384.61	257,388.04	270,542.54
France	43,655.55	64,130.26	80,001.02
Pacific Islands	7,292.12	1,035.48	....
Chile	....	222,749.80	....
All others	99,636.33	163,300.51	198,692.66
Total	11,650,890.81	19,059,605.79	10,683,516.12

Exports, by countries.

	1898.	1899.	Jan. 1, to June 14, 1900.
United States	$17,256,084.49	$22,517,758.82	$14,362,898.97
China and Japan	44,823.25	54,052.00	31,197.90
Canada	23,963.28	17,067.62	569.29
Australia and New Zealand	21,873.77	39,863.38	9,830.00
Total	17,346,744.79	22,628,741.82	14,404,496.16

Passenger movements.

	Arrived.			Departed.		
	1898.	1899.	Jan. 1, to June 14, 1900.	1898.	1899.	Jan. 1, to June 14, 1900.
Chinese	3,10	975	303	1,784	1,514	644
Japanese	9,434	26,103	6,017	2,193	2,780	983
All other	4,695	5,647	1,570	3,336	4,769	1,621
Total	17,229	32,725	7,890	7,313	9,063	3,248

Value of carrying trade for 1898, 1899, and from January 1 to June 14, 1900, according to nationality of carrring vessels.

	Imports.			Exports.		
	1898.	1899.	Jan. 1 to June 14, 1900.	1898.	1899.	Jan. 1 to June 14, 1900.
American	$7,028,026.36	$11,825,562.54	$6,852,759.42	$13,139,696.29	$17,949,720.74	$11,057,822.48
British	2,466,116.08	3,570,296.94	1,731,540.83	633,597.40	267,238.01	512,862.31
Hawaiian	1,548,352.23	2,042,768.39	1,352,360.41	3,014,356.84	3,673,579.74	2,300,589.93
German	535,975.59	450,685.70	123,454.08	443,807.26	591,108.96	527,366.62
All others	72,420.55	1,170,292.22	623,401.38	115,287.00	147,094.37	5,854.82

LABOR.

The Territorial act has, by its provision that no proceedings shall be maintained for the specific performance of any contract for personal service nor for the breach of any such contract, except suits for damages for breach of contract, practically canceled all labor contracts which were existing on the 14th of June, 1900. A large number of Japanese contract laborers have taken advantage of this immunity and have either deserted work or have become irregular and uncertain in their performance. Many are wandering over the country in quest of engagements at higher wages than they have received heretofore. The result is that many plantations are greatly prejudiced in their operations for want of labor, some of them, indeed, having less than half of the number of hands they require.

The rate of wages has been raised on some plantations, which has had the effect of enlisting in some localities an increased number of natives in plantation work.

There is a strong feeling among sugar men that some source of labor supply outside of the Territory is essential to the continued prosperity of local sugar enterprises. Outside of the sugar plantations there is an adequate supply of work for the skilled mechanics already in the Territory. The number of sugar plantation laborers in 1898 was 28,579; in 1899 the number had increased to 35,987.

The following table gives the ratio of nationality and of contract and day laborers for 1898 and 1899:

	1898.			1899.		
	Day.	Contract.	Total.	Day.	Contract.	Total.
Hawaiian	1,251	231	1,482	1,163	163	1,326
Portuguese	2,028	36	2,064	2,000	153	2,153
Japanese	6,259	10,527	16,786	8,107	17,547	25,654
Chinese	2,323	4,877	7,200	3,201	2,768	5,969
South sea islands	25	43	68	69	10	79
Total	11,886	15,714	27,600	14,540	20,641	35,181
Other nationalities			979			806
Total			28,579			35,987

Number and nationality of skilled labor on Hawaiian sugar plantations October 31, 1899.

Americans	405
Hawaiians	219
British	252
Germans	218
Portuguese	305
Scandinavians	71
Australians	16
Japanese	416
Chinese	94
Other nationalities	23
Total	2,019

CONDITION OF THE NATIVES.

At the last census, in 1896, there were in the Hawaiian Islands 39,504 Hawaiians and part Hawaiians. Of these 31,019, made up of 16,399 males and 14,620 females, were pure Hawaiian, and 8,485, made up of 4,249 males and 4,236 females, were part Hawaiian.

Hawaiian Schoolboy.

There has been some anxiety on the part of the friends of the Hawaiians, and probably among the Hawaiians themselves, as to the effect of annexation upon their national character and upon their individual prospects as well. It is clear that the decrease of the Hawaiian race has been steadily growing less rapid for the past several decades, and the decrease in the number of females has been checked to a greater extent than that of the males. The per cent of decrease among the pure Hawaiians from 1884 to 1890 was 0.139 per cent; from 1890 to 1896 it was 0.99 per cent. On the other hand, part Hawaiians increased from 1890 to 1896 0.371 per cent; and the decrease of the aggregate of Hawaiians and part Hawaiians for the same time was only 0.027 per cent.

When we take into consideration the fact that the increase of part Hawaiians tends to keep down the number of pure Hawaiians, inasmuch as a large proportion of the mothers of part Hawaiians are themselves pure Hawaiians, we find that a part at least of the decrease of pure Hawaiians is not due to any abnormal cause.

The census of 1890 shows the percentage of pure Hawaiian women who have borne children, to the whole number, to have been 0.5432; the percentage shown in 1896 was 0.5936. Among part Hawaiians, the percentage in 1890 was 0.5234; in 1896 it was the same.

The census of 1890 reports the average number of children to each pure Hawaiian mother to have been 4.70. This average increased in the census of 1896 to 4.82. These averages were only exceeded in the census of 1890 by the Portuguese average, and in the census of 1896 by the French and Portuguese averages. The average for part Hawaiian mothers reported in 1890 was 4.02, and in 1896 was 4.45.

While these figures show race progress, the census reports as to surviving children are discouraging. The census of 1890 gives 0.547 per cent of survivors of pure Hawaiian children, and 0.7169 per cent in the case of part Hawaiian children. In 1896 the percentage of survivors of pure Hawaiian children was 0.595 and of part Hawaiian children 0.7512. In both years the pure Hawaiian percentage of survivors was the lowest of all nationalities represented in the Hawaiian Islands, yet there is comfort in the fact that there was a substantial increase in this percentage from 1890 to 1896, due, without doubt, to a growing intelligence in the care of children.

An encouraging outlook for the Hawaiians exists in the fact that out of 6,327 owners of real estate in 1896, 3,995 were pure Hawaiians and 722 part Hawaiians. This is an increase of 724 landowners among the pure Hawaiians between 1890 and 1896, and of 327 among part Hawaiians in the same period.

The majority of these holdings are small, but the importance of these figures is, I think, in the fact of ownership in real estate by so large a number of Hawaiians and in the evident tendency in this race to acquire homesteads. Out of a population of 109,030, the Hawaiians, numbering 36 per cent of the whole, furnish 4,717 landowners out of a total of 6,327 landowners for the whole group, or 0.745 per cent.

The Hawaiians are industrious as a rule and eager for education in the English language, but exhibit to a less degree than other races occupying the Hawaiian Islands, except Polynesians, the qualities of enterprise, thrift, and persistence. They are, however, improving in all these particulars.

There is reason to expect that annexation, through the changed conditions which it will affect, is going to influence Hawaiian character very favorably. Their old dependence on their chiefs having ceased, they are forced to rely more upon themselves. The increased intercourse they will have in the future with white men on an equal footing, with its rivalry in labor, business enterprise, and land settlement, can not fail to have a beneficial influence upon them. The political privileges they enjoy in common with other American citizens will tend to educate them in public affairs.

There will be, doubtless, some influences in the new state of things which will be unfavorable. Where a community is made up of two races differing in education, experience, and hereditary force there is inevitably some prejudice to both, socially, if not in other directions; but it is to be hoped that the Hawaiians have profited sufficiently by the civilizing influences they have enjoyed for at least two generations to enable them to escape in a large measure from the unfortunate experiences of other like races similarly situated.

PUBLIC BUILDINGS.

Honolulu, the capital of the Territory, is well supplied with public buildings suitable for the executive and judicial offices. These include the capitol, which was formerly the palace, a large and substantial building of two stories and a basement, built of brick. The judiciary building, built of artificial stone, of two stories and of sufficient capacity for the offices and court rooms of the supreme and first circuit courts. The lower story is now occupied by the registry of deeds, the commissioner of public lands, the tax bureau, and the federal court.

The Kapuiwa building, of brick or artificial stone, and of two stories. The survey bureau occupies the upper story and the board of health the lower.

The station house, of two stories and a basement, built of brick. This is the headquarters of the police bureau, and contains the district court room in the second story and detention cells in the basement.

The post-office, of two stories, built of artificial stone, now occupied by the Federal postal service.

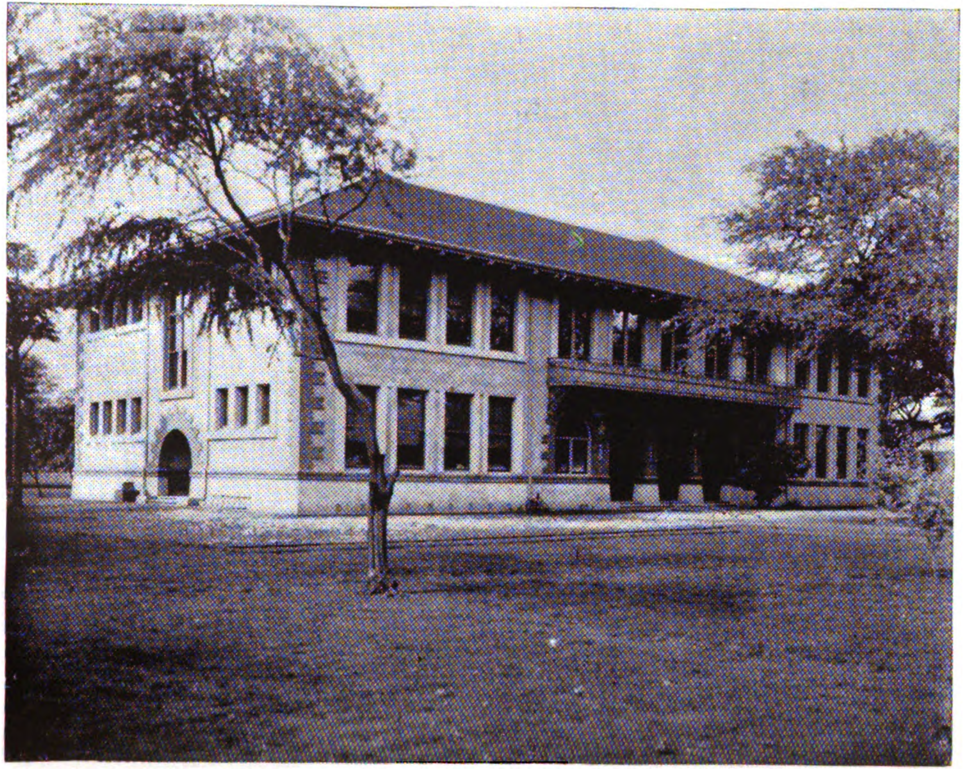
The custom-house, a block of brick or stone buildings and warehouses, now occupied by the Federal customs service.

The Honolula Hale, an old coral building, used in the forties for the administrative offices, now used by both Federal and Territorial officials.

The Oahu prison, an old two-story coral building. In good order, but insufficient for the present needs.

The barracks and drill shed. The barracks is an old building of coral, built for the occupation of the household troops under Kamehameha Fifth. Of little use at the present time. The drill shed is a large shell of corrugated iron, containing a large drill room and company rooms. It is occupied by the First Regiment, National Guard, Hawaii. It is only of temporary value, and should be replaced by a substantial armory of brick or stone.

A two-story building of brick or stone for a dispensary and emergency hospital is contemplated by the Government as soon as funds can be spared for it.



Kaiulani Schoolhouse, Honolulu.

The government of the republic of Hawaii has recently built two large schoolhouses in Honolulu, of brick, containing 12 rooms apiece—the Princess Kaiulani School and the Kaahumanu School, at a cost of $24,778.33 and $20,349, respectively.

A new fireproof school building, to take the place of the old Royal school building in Honolulu, which had become unsafe and was taken down, is contemplated, the cost of which will be, approximately, $75,000.

Substantially all other public-school buildings in the Territory are constructed of wood. It is now the policy of the government to make the larger school buildings of brick or stone.

Public buildings on the other islands of the group are built mainly of wood.

There is need of a custom-house and a post-office in the town of Hilo, and Federal offices in Honolulu, as the Territory will soon require some, if not all of the quarters now loaned to Federal officials.

EDUCATION.

The department of education is under the management of a superintendent of public instruction, assisted by six commissioners of public instruction, two of whom are ladies. The tenure of office of the commissioners is six years, the term of two of them expiring each year. They serve without pay. The system is the same as that existing under the Republic of Hawaii.

In the biennial period ending December 31 there were 141 public and 48 private schools in the Hawaiian Islands; 344 teachers in the public schools, of whom 113 were men and 231 were women, and 200 teachers in the private schools, of whom 79 were men and 121 were women. In the same period there were 11,436 pupils in the public schools, of whom 6,395 were boys and 5,041 were girls, and 4,054 pupils in the private schools, of whom 2,256 were boys and 1,798 were girls. This gives a total of 15,490 pupils, of whom 8,651 were boys and 6,839 were girls.

Table of illiteracy for the years 1884, 1890, and 1896.

Year.	Number over 6 years.	Per cent able to read and write.
1884	70,382	55.43
1890	78,571	48.85
1896	93,105	63.90

Table of illiteracy for 1896, by nationalities.

Nationalities.	Number over 6 years.	Per cent able to read and write.	Nationalities.	Number over 6 years.	Per cent able to read and write.
Hawaiian	26,495	83.97	Norwegians	215	80.46
Part Hawaiian	5,895	91.21	Portuguese	8,089	27.84
Hawaiian-born foreigners	5,394	68.29	Japanese	22,189	53.60
Americans[a]	2,060	86.02	Chinese	19,317	48.47
British	1,516	95.44	South Sea Islanders	407	40.05
Germans	899	86.31	Other nationalities	423	75.41
French	75	92			

[a] 130 sailors of U. S. S. Adams not tabulated.

Industrial and reformatory school for 1898 and 1899.

Inmates:	
In school January 1, 1898	38
Committed during biennial period	69
In school December 30, 1899	39
Total	107
Left school:	
Discharged	65
Escaped	2
Sent to prison	1
Total	68

Nationality:	
Hawaiians	40
Part Hawaiians	8
Portuguese	14
Chinese	2
Japanese	1
American	2
Italian	1
German	1
Total	69

Offenses.

Truancy	26
Larceny	31
Disobedience to parents	4
Assault and battery	2
Malicious injury	2
Accessory after fact	1
Vagrancy	1
Common nuisance	1
Burglary	1
Total	69

Manual training.	Number worked.	Number articles made.	Value.
Carpenter shop	6	98	$232.05
Harness shop	4	220	317.50
Tin shop	4	252	10.50
Sewing shop	4	(*a*)	(*a*)
Total	18	570	560.05

a No account kept of sewing for school.

Cost of material	$433.75
Balance, cash	126.30
Total	560.05

CASH.	DR.	CR.
Balance, 1897	$1.80	$233.95
January, 1898, to December 31, 1899	358.45	126.30
Total	360.25	360.25

Nationality of pupils attending school in the Hawaiian Islands from 1890 to 1899.

	1890.	1892.	1894.	1895.	1896.	1897.	1898.	1899.
Hawaiian	5,599	5,353	5,177	5,207	5,480	5,330	5,406	5,043
Part Hawaiian	1,573	1,866	2,103	2,198	2,443	2,479	2,568	2,721
American	259	371	285	386	417	484	526	601
British	139	131	184	200	256	280	234	213
German	199	197	208	253	288	302	319	337
Portuguese	1,813	2,253	2,551	3,186	3,600	3,815	3,818	3,882
Scandinavian	56	71	83	96	98	106	112	84
Japanese	39	60	113	261	397	560	737	1,141
Chinese	262	353	529	740	931	1,078	1,170	1,314
South Sea Islanders	42	36	35	29	23	10	30	30
Other foreigners	25	21	39	60	90	78	77	124
Total	10,006	10,712	11,307	12,616	14,023	14,522	14,997	15,490

Ages of all pupils in all schools of the Hawaiian Islands.

	Under 6.	6 to 15.	Above 15.
Public schools:			
Boys	161	5,743	491
Girls	141	4,736	164
Total	302	10,479	655
Private schools:			
Boys	229	1,640	387
Girls	229	1,319	250
Total	458	2,959	637
Total in public and private schools:			
Boys	390	7,383	878
Girls	370	6,055	414
Total of both sexes	760	13,438	1,292

Pupils in public schools according to course of study.

	1892.	1894.	1895.	1896.	1897.	1898.	1899.
First year	3,035	2,863	3,543	5,881	3,331	3,441	3,658
Second year	1,661	1,896	2,090	2,278	2,089	2,135	2,280
Third year	1,209	1,469	1,639	1,789	1,834	1,760	1,810
Fourth year	631	797	904	1,063	1,273	1,432	1,427
Fifth to eighth year	388	592	799	1,020	1,780	1,964	2,066
High-school course	224	115	118	163	235	233	196
Total	7,148	7,732	9,093	10,189	10,542	10,965	11,436

Nationality of teachers in all schools of the Hawaiian Islands.

	1892.	1894.	1895.	1896.	1897.	1898.	1899.
Hawaiian	93	80	68	68	57	61	62
Part Hawaiian	47	61	60	59	62	64	68
American	154	155	177	226	253	254	282
British	57	57	66	76	69	67	66
German	9	4	8	8	12	10	8
French	9	7	6	5	6	6	9
Belgian	4	5	5	7	....	2	....
Scandinavian	5	7	5	6	6	9	7
Dutch	....	1	2	1	....	1	....
Portuguese	8	10	13	13	20	22	22
Japanese	....	1	2	2	3	3	4
Chinese	4	17	14	11	13	15	10
Other foreigners	2	....	....	....	6	2	6
Total	392	405	426	482	507	516	544

Nationality of teachers.

PUBLIC SCHOOLS.

	1892.	1894.	1895.	1896.	1897.	1898.	1899.
Hawaiian	79	70	53	53	49	51	51
Part Hawaiian	41	50	48	49	48	49	54
American	77	77	95	105	134	140	160
British	39	36	44	52	42	48	49
German	4	1	2	2	2	3	2
Portuguese	5	6	9	11	12	15	17
French	1	1	1	1	1	1	1
Scandinavian	4	6	3	5	6	7	7
Belgian	....	....	1	1	1	1	....
Chinese	....	....	1	1	1	....	....
Other foreigners	....	....	....	....	2	1	3
Total	250	247	257	280	298	316	344

Nationality of teachers—Continued.

PRIVATE SCHOOLS.

	1892.	1894.	1895.	1896.	1897.	1898.	1899.
Hawaiian	14	11	15	15	8	10	11
Part Hawaiian	6	10	12	10	14	15	14
American	77	78	82	121	122	114	122
British	18	21	22	24	25	19	17
German	5	3	6	6	10	7	6
Portuguese	3	4	4	2	6	7	5
French	9	6	5	4	5	5	8
Scandinavian	1	1	2	1	1	2	....
Belgian	3	5	4	6	....	1	....
Dutch	2	....	2	1	....	1	....
Japanese	....	1	2	2	3	3	4
Chinese	4	17	13	10	12	15	10
Other foreigners	....	1	....	....	3	1	3
Totals	142	158	169	202	209	200	200

UNDEVELOPED RESOURCES.

It may be said that with the exception of the production of sugar, rice, firewood, fertilizers, and live stock, and the promotion of irrigation, the development of the natural resources of the Hawaiian Islands is scarcely begun. In irrigation a good beginning has been made, but a great extension of it is very practicable. The same may be said about the production of fertilizers. Several of the small uninhabited islands in the northwestern part of the group have considerable quantities of phosphate guano. One of these, Laysan Island, has been worked for several years by a local company under a lease from the Hawaiian government.

The production of fruit, vegetables, and farm products is capable of a large increase. This will be promoted both by a growing local demand, due to an increasing population, and by an improved market for some of these products on the mainland under the influence of free trade.

The canning industry and the production of jellies and jams will be stimulated by the same new conditions.

The climate and soil of the Territory are most favorable for the growing of fiber plants, in which enterprise some experiments have already been made.

There is reason to believe that factories for the manufacture of cordage and dress fabrics, supplied with raw material from local production, may be profitable.

There seems to be no good reason why woolen factories for manufacturing the local product might not be profitably carried on.

A shoe manufacturing enterprise, to consume the local production of hides, is now being organized in Honolulu.

There is an exotic plant, the Acacia Farnesiana (Kalu), which for many years has grown wild in our arid lands, the flowers of which are valuable for the manufacture of perfumery. If such an enterprise should be established it could be supplied with flowers to an almost unlimited extent.

It is highly probable that the cultivation of tobacco can be made very profitable. The plant seems to be greatly favored by both soil and climate, as it grows wild in several localities.

There is quite a large variety of indigenous trees in the Hawaiian forests, which furnish timber of great beauty and most suitable for the manufacture of furniture. The growth of such trees may be greatly promoted by protection and cultivation.

There is a large variety of fish of good quality in the waters washing the coasts of the Hawaiian Islands. At present fishing is carried on by means of boats and native canoes, and in the shallow waters of the coral reefs without such means, for the supply of the local demand alone. A considerable portion of the fish caught is salted and dried for home consumption, also. Prices of fish in the larger towns are absurdly high. There seems to be a good opportunity for a considerable development of the Hawaiian fisheries, especially if an outside market could be found for a part of the product.

LEGISLATION.

A provision of section 55 of the Territorial act authorizes the legislature of the Territory of Hawaii, by general act, to permit persons to associate themselves together as bodies corporate for manufacturing, agricultural, and other industrial pursuits, and for conducting the business of insurance, savings banks, banks of discount, loan, trust, and guaranty associations, for the establishment and conduct of cemeteries, and for the construction of railroads, wagon roads, vessels, and irrigating ditches, and the colonization and improvement of lands in connection therewith, or for colleges, seminaries, churches, libraries, or any other benevolent, charitable, or scientific association.

If this provision does not repeal existing legislation by which the executive may grant charters for certain specified purposes, and by which persons may associate themselves together as joint stock companies for certain specified purposes and become incorporated as such by filing the requisite papers, a thorough revision of the Hawaiian corporation laws is desirable in view of some deficiencies and questionable features in the same and of the new conditions brought about by annexation.

COMMISSIONERS OF DEEDS.

Legislation is necessary to provide for the appointment of commissioners of deeds in localities outside of the Territory, the duties of such officers having heretofore been performed by Hawaiian consuls.

FISH PROTECTION.

There is great need for legislation for the protection of Hawaiian food fishes through regulations in regard to the meshes of nets used in taking them and perhaps in other ways, as in recent years very wasteful methods of taking fish have become common.

VAGRANCY.

The local law on this subject requires additions for the sake of greater efficacy and a wider application.

EDUCATION.

There is a small number of children scattered over the Territory who are ineligible for admission into the public schools on account of their inability to pass the required medical examinations. Provision for the education of such children is an urgent necessity.

IRRIGATION.

Legislation looking to the development of such water supply as may exist on the public lands, with a view of promoting land settlement thereby and enhancing the public revenues, seems desirable.

MUNICIPAL SYSTEMS.

As the Territorial act authorizes the legislature to create counties and city municipalities within the Territory, a general act covering the ground would seem to be advisable.

PUBLIC LANDS.

These lands are made up of the real estate known as government lands and crown lands under the monarchy, excepting such parts thereof as may have since been conveyed to private parties.

The constitution of the Republic of Hawaii, in article 95, declared the crown lands to be the property of the Hawaiian Government, and subject to alienation and other uses as may be provided by law. The Territorial act in section 99 confirmed this declaration in nearly the same words. Since the promulgation of the constitution of the Republic of Hawaii, these lands have been classed with other Government lands and administered under the laws pertaining thereto.

The present aggregate area of the public lands is approximately 1,772,713 acres, valued at $3,569,800.

The following table prepared by Mr. J. F. Brown, commissioner of public lands in 1899, gives the classification of 1,720,055 acres of public lands under the control of the commissioner of public lands, as follows (about 28,000 acres were under the control of the minister of interior):

Island.	Acres.	Value.
Kauai	176,050	$648,000
Oahu	86,661	476,300
Lanai	47,600	50,000
Kahoolawe	30,000	20,000
Molokai	33,660	60,100
Maui	178,870	418,000
Hawaii	1,191,872	1,857,400
Laysan, etc., islands	....	40,000
Total	1,744,713	3,569,800

This table is somewhat arbitrary, a considerable portion of the area given of grazing lands being suitable for sugar cultivation and general farming and of forest lands for coffee and fruit cultivation.[1]

Respectfully submitted.

SANFORD B. DOLE.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

---

[1] For land transactions since June 14, last, see Appendix.

HAWAIIAN FISHERMAN.

APPENDIX.

HONOLULU, *October 18, 1900.*

SIR: I submit herewith brief statement of the transactions of this office since June 14 last.

Sales under conditions of residence and cultivation.

	Number.	Area.	Purchase price.
Olaa, Puna, Hawaii	87	4,176	$78,800.26
Waialua, Oahu	1	61	4,000.00
Total	88	4,237	82,800.26

General leases:

Kahikinui, Koolau Maui ....acres..	25,000
Yearly rental	$3,010

Referring to above, I would state that the sales in Olaa, Puna, Hawaii, were at auction, under conditions providing for payment of purchase price any time within ten years by installments or otherwise, at option of purchaser. Maintenance of home for six years and cultivation of 25 per cent, or maintenance of home for four years and cultivation of 50 per cent, required as further condition for land patent. These lots, which adjoined new roads recently constructed at large expense, were in active demand, and purchasers were limited to one lot of 50 acres each.

Lot sold at Wahiawa, Waialua, was at auction under condition of four years' residence and cultivation of 25 per cent, and sold for an unusual price, owing to special location on this island.

KAHIKINUI LEASE.

This lease, sold at auction for term of five years, covered the arid, waterless lands of the Kahikinui district, of which a large amount is represented by barren lava flows. Although such reservation seemed superfluous, a condition of the lease reserves the right of the public lands office to take over any portion if the same should be found suitable for settlement. The rental obtained, $3,010 yearly, is a good one.

LANDS TO BE OPENED.

There remains in the Olaa section, Puna, Hawaii, about 15,000 acres of surveyed lots which will be disposed of as applications are received. In connection with these lots, additional roads should be constructed, as good roads are imperatively needed in wet forest country.

KAMAKUA, HAWAII.

About 2,000 acres in this district, recently subdivided, will be opened at an early date.

N. KONA, HAWAII.

A tract of about 2,000 acres in this district is awaiting decision as to road location, and will as soon as possible thereafter be opened up.

The lower portion of the land of Hauula, on this island, has been recently surveyed for the purpose of homestead leases to natives who have long been resident on the land.

Numerous petitions have been received from applicants for lands in different localities, many of these petitions being from natives, and these will be dealt with as rapidly as surveyors can be found for the necessary work of subdividing the lands. The lack of competent surveyors for such work is a considerable embarrassment at this time, as private work, which is plentiful, absorbs most of the surveyors. It is expected, however, that progress will shortly be made in the survey of lands in Wailua, Maui, in Kaauhuhu, Kohala, and in North Hilo, Hawaii, desired by numerous applicants.

ISLAND OF KAUAI.

Owing to the manner in which the lands on Kauai were tied up under old Crown leases, no settlement lands have been offered on that island. I expect to present to you, shortly, a proposition for exchange by which a tract of about 2,000 acres, especially suited for small holdings, may be acquired by this office for that purpose.

I would call attention to the fact that nearly all of the public lands available and having sufficient moisture to make any agricultural enterprise a success, are forest lands at considerable elevation. In view of the present interest in the preservation of the forest and the importance of that question, I hope we may obtain the services of some expert forester who can assist in establishing the limits beyond which the clearing of lands should not go.

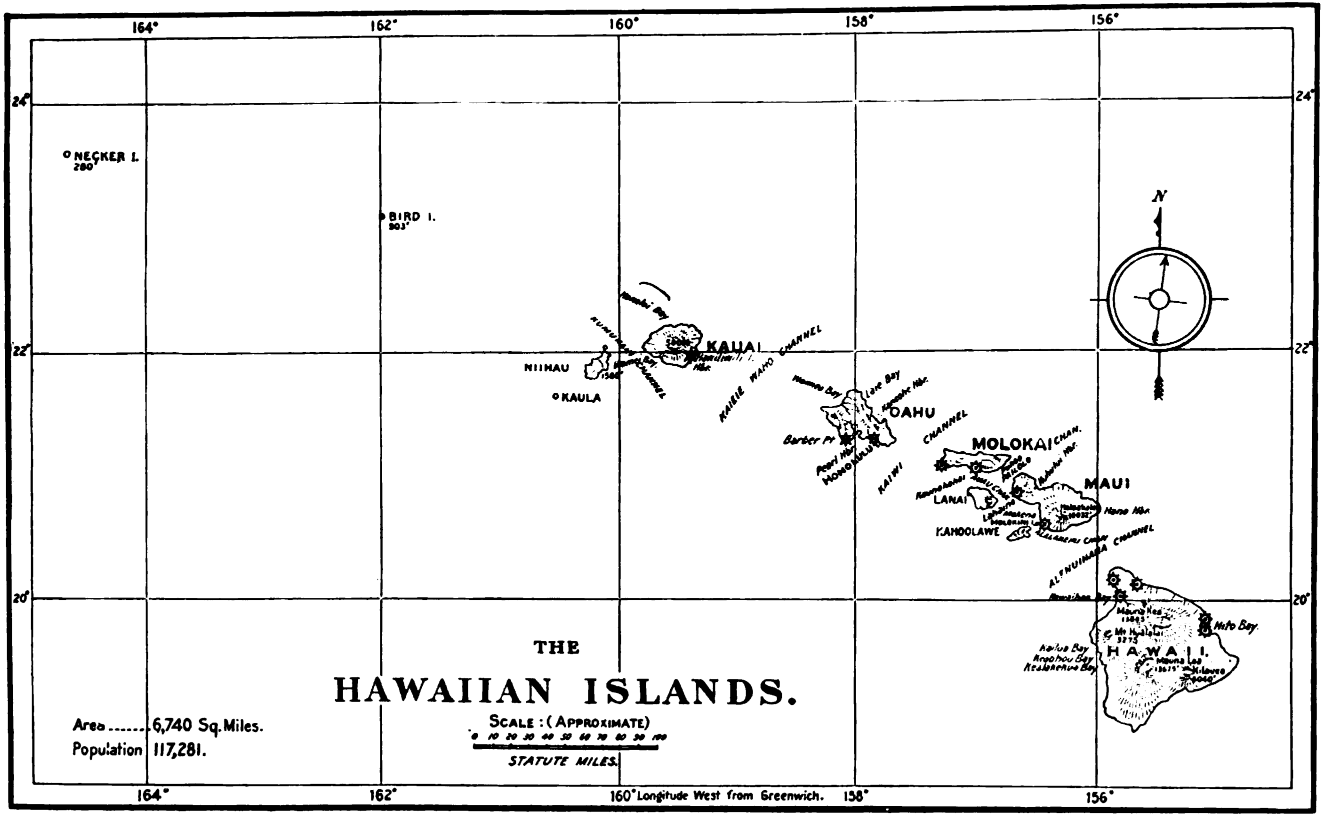
Yours, respectfully,

J. F. Brown,
Commissioner of Public Lands.

Sanford B. Dole, Esq.,
Governor Territory of Hawaii.

Land patents issued since June 14, 1900, in completion of previous agreements.

No. of patent.	Grantee.	Date.	Area.	Location.	District.	Island.	Consideration.	Fee.	Remarks.
		1890.	*Acres.*						
4385	C. W. Hill	Aug. 2	47.25	Olaa	Puna	Hawaii	$283.50	$5.00	Olaa Reservation.
4386	do	Aug. 2	150	do	do	do	450.00	5.00	Do.
4387	I. Renwick and J. R. Brockie.	Aug. 2	97.25	do	do	do	483.50	5.00	Do.
4388	do	Aug. 2	102.75	do	do	do	308.25	5.00	Do.
4389	A. F. Wall	Aug. 2	50	do	do	do	150.00	5.00	Do.
4390	do	Aug. 2	150	do	do	do	450.00	5.00	Do.
4391	Kamaki	Aug. 2	28.5	do	do	do	170.00	5.00	Do.
4392	Marion de Carmo.	Aug. 2	17.65	Waiakoa	Kula	Maui	88.25	5.00	Homestead.
	Total		628.40				2,383.50	40.00	



THE HAWAIIAN ISLANDS.

REPORT

OF

THE COMMISSIONER OF THE INTERIOR FOR PORTO RICO.

DEPARTMENT OF THE INTERIOR.
Washington, July 7, 1900.

SIR: I have the honor to invite your attention to section 24 of the act of Congress approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and other purposes," which provides as follows:

> That the commissioner of the interior shall superintend all works of a public nature, and shall have charge of all public buildings, grounds, and lands, *except those belonging to the United States*, and shall execute such requirements as may be imposed by law with respect thereto, and shall perform such other duties as may be prescribed by law, and make such reports through the governor to the Secretary of the Interior of the United States as he may require, which shall annually be transmitted to Congress.

I have to request that you will cause this matter to be brought to the attention of the commissioner of the interior with request that he will prepare and forward through you for my consideration, at a date not later than October 1, 1900, a report of the matters pertaining to Porto Rico, with which he is charged under existing laws. It is also desirable that he embody in his report a statement of the character, quantity, and location of Crown lands, the ownership to which the United States succeeded by virtue of the treaty of Paris, together with a statement of the quantity and location of all unreclaimed or swamp lands in Porto Rico. This report should cover the period from April 12, 1900, to date of its rendition. In this connection it is suggested that statistical statements embodied in the report should not be given from estimates where it is possible to obtain the same from original sources.

It is desirable that a report of the commissioner of the interior of Porto Rico be submitted to the Department within the time above specified in order that proper consideration may be given to the important subjects therein requiring attention in the annual report of the Secretary of the Interior to the President.

Very respectfully,

E. A. HITCHCOCK, *Secretary.*

The GOVERNOR OF PORTO RICO,
San Juan, P. R.

EXECUTIVE MANSION, PORTO RICO,
San Juan, P. R., September 19, 1900.

SIR: I have the honor to inclose reports from the commissioner of the interior of the island of Porto Rico, and of his subordinate officers, as required by section 24, act of Congress approved April 12, 1900, as well as in compliance with your letter of July 7, 1900.

Very respectfully,

CHAS. H. ALLEN, *Governor.*

The SECRETARY OF THE INTERIOR,
Washington, D. C.

DEPARTMENT OF THE INTERIOR OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, September 15, 1900.

SIR: In compliance with section 24 of the act of Congress approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," and in response to the suggestions of your letter of date July 7, 1900, addressed to the governor of Porto Rico and by him referred to me for my information and instruction, I have the honor to submit (through the governor of Porto Rico) for your consideration a report of the matters pertaining to Porto Rico with which the commissioner of the interior is charged under the law.

By the provisions of General Orders No. 102, of date April 30, 1900, issued by Brig. Gen. George W. Davis, commanding the Department of Porto Rico, preparatory to the inauguration of civil government on May 1, 1900, as provided by the act of Congress approved April 12, 1900, there were assigned to the department of the interior the duties, responsibilities and records pertaining to patents, trade-marks and labels, public lands and forests, agriculture, mines and minerals, public works (including care of public buildings), health, charities, and archives of the insular government of date anterior to American occupation. The assignments, it will be noted, are numerous; the experience of a few months has shown me that the duties imposed by most of them are burdensome and exacting.

I assumed charge as commissioner of the interior on June 15, 1900, and gave immediate attention to the organization of the department and the assignment of employees. As now constituted, the several branches and duties are distributed as follows:

The board of public works, composed of three members, to which has been committed the care of public buildings, matters relating to harbor shores and lands, railroads, highways, bridges, streams, canals, irrigation, marsh lands, aqueducts, and the supervision and inspection of all works undertaken by the insular government, by provinces, by municipalities, and under private concessions which in any way affect the public domain.

The board of charities, composed of six members, only one of whom, the secretary and treasurer, receives compensation. This board has charge of the insane asylum, the boys' and girls' charity schools, the leper hospital, and, through local boards, the general supervision of the charity interests of the island.

The superior board of health, composed of five members, including the commissioners of education and the interior. The sanitary affairs of the whole island, either by direct action or through the health officials of the several municipalities, are in charge of this board. Its duties, under ordinary circumstances, would be multitudinous and important, but the serious conditions of poverty long prevailing and aggravated by the calamity of last year's hurricane render them serious and trying.

The bureau of agriculture and related industries, and the divisions of mines and minerals, patents, trade-marks and labels, archives and public lands and forests complete the organization of the department over which the commissioner, as administrative head, and in addition to his duties as a member of the executive council and the governor's cabinet, is required to hold supervision.

In the institution of the new department, involving the assignment of duties and distribution of records and papers under the civil government, the fact that elaborate, intricate, and cumbersome methods, with entries all in Spanish, have had to be replaced by a system affording better facilities for the prompt dispatch of business, by a force of employees unable, with rare exceptions, to speak or understand the English language, and with habits fixed by years of practice in the old way, has militated against rapid progress in the important work of the department. Upon the whole, however, I find no cause for discouragement, and my experience has given me such confidence in the capability and fidelity of the employees that I shall hope to present in future reports matters of value to the Government as well as to those interested in the prosperity of Porto Rico.

I have delved far enough into the public lands records to discover that a great deal of expert manipulation as well as detective ingenuity will be needed to untangle the mass of cross titles, duplication and lapping of grants and concessions, and unauthorized occupation of lands that have grown with the centuries of rule in the interest of the favored few. The archives of the island were found in a disordered condition; many expedients, or records of cases, have never been closed and are mixed with those disposed of. Rearrangement and classification are necessary prior to investigation.

During the early history of Porto Rico the governors and captain-generals held or assumed the right to make grants of land. Grantees appropriated extensions of their original boundaries, and their successors claim ownership. In 1818 a royal schedule was issued granting lands to all persons who would engage in agriculture, pay a small impost, and agree to clear and cultivate each year the tenth part of the total area up to one-half. Forfeiture of the lands to the State was the penalty for noncompliance with the terms of the grant.

Concessions were numerous, but in many cases the terms of the Government were not complied with. Many grants were abandoned. Some were returned to the State, but in numerous instances the lands were taken possession of by intruders. For the reasons stated, it is not possible at this time to determine the location or amount of all such lands.

Under Spanish domination there existed at San Juan, the capital, a "negociado" (office or division), which had charge of all uncultivated or State lands. In this department was a board of repartition. Each municipality was required to keep a record of all such lands lying within its boundaries and to notify the board of the measurement of lands and the fulfillment of the terms of all concessions. There were similar sections and the same regulations relating to mines, water courses, lakes, lagoons, swamps, and marshes. There were State lands in the highlands and on the seashore. Concerning the latter, whatever the original concessions may have covered, it can be shown that the areas of numerous valuable sugar estates have gradually extended over adjacent territory at one time marshy, but through natural process or by drainage have become dry and cultivable. State forest lands exist in almost every municipality. The greater part of them has been cleared, and they are occupied by squatters or persons claiming ownership by virtue of deeds or inheritance from squatters.

In 1897 the Spanish Government, in order to have every legal owner justify his title and the State recover its own, and at the same time classify the lands, ordered a careful listing of the real property in each municipality; but, either because of the expense or for political reasons, the order was not carried out prior to American occupation. The need of such listing continues, and it must be accomplished before the numerous questions of ownership can be definitely determined. It will be slow work, at best.

I inclose, Exhibit A, a tabulated statement giving the location, quantity, and character of lands which the records of this department show to have belonged to the Crown prior to December 10, 1898. It does not correspond with a list submitted by Brigadier-General Davis and published as Appendix K in his report on the civil affairs of Porto Rico, 1899. Closer investigation made since the date of General Davis's report shows that the occupants of some lands listed in Appendix K have legal titles thereto, and recent discoveries have been added.

For your full information concerning the organization of the department of the interior of Porto Rico, and as relating to the duties assigned to the commissioner, likewise as matters of possible historical value in the institution of civil government for the island, as well as of probable public interest, I submit herewith reports from the presidents and chiefs of the boards and bureaus of the department. The terms of existence under civil administration have been too brief to admit of the accumulation of instructive or valuable statistical information; hence my request to them was for a general statement covering the scope, operations, and present conditions of their various divisions. Perusal of the contents shows me that all of the reports are comprehensive and instructive.

The report of the president of the board of public works (Exhibit B) presents valuable information relative to the importance of the board and the character and progress of the work assigned to it. Having knowledge of the physical characteristics of the island, the nature of the soil, and the antecedent requirements of agricultural development, and being acquainted with the customs, habits, and inclinations of the people, I recognize the fact that the first great, crying need of Porto Rico is good roads. At the time of American occupation there was but one really good road—that from San Juan to Ponce, with a branch from Cayey to Guayama—on the island. A few short stretches of completed road led out from the larger seacoast towns on the lines of a certain "approved plan" of roads, which had been elaborately conceived and attentively "studied" at large expense for years, but had advanced only as stated beyond the paper period. The whole interior of the island—and for the purposes of this statement the interior lines may be considered as closely approaching the seashore—was and practicably remains without other means of reaching a market, or communication between country and town, or town and town, than over dilapidated and dangerous trails, often, in the rainy season, impassable for days, for all the streams are torrential and there are many of them. The productiveness of the soil is so great and the necessities for existence in this climate so few and inexpensive that people can and do live and multiply in the mountain districts, but remain forever poor and ignorant—conditions that should be ameliorated if not wholly removed, but which, without roads over which produce can be carried to market and agriculture encouraged by being made profitable, can not be successfully accomplished.

A great deal has been said, and well said, about the education of the children of Porto Rico, and there should be no delay in the prosecution of the good work; but roads are needed to expedite it. The thousands of poor parents in the interior are not only unable to decently clothe their children, but can not provide suitable food. Anæmia is the prevailing disease among old and young and is painfully in evidence wherever one travels. The emaciated and sallow body and the blood-diseased brain are poor receptacles for learning. Give the landowner the incentive to plow and sow and reap and the poor the opportunity to labor and earn wages more than sufficient to eke out a miserable existence upon; I verily believe then, and not until then, will educational efforts bear good fruit. Permanent roads will work the reform.

The military government promptly set about the building and repair of roads. Because much of the work was at first undertaken to relieve the demand for labor or food, and therefore without proper surveys or location of lines, a considerable portion was speedily undone by the rains and floods. Later the matter was taken up in a more deliberate and comprehensive way and now a number of substantial roads are under construction. They are, however, only a few of the many needed, as the very excellent map attached to Exhibit B clearly shows.

I realize that it would be folly to expect that the revenues of the island will be large enough to admit of an apportionment for roads sufficient to enable the construction of new roads to be pushed with any sort of vigor. Indeed, I apprehend that the road fund available from year to year will not be more than sufficient to properly maintain the roads now in existence and in process of construction. I purpose having the roads and trails most needed carefully listed and estimates of the probable cost of construction prepared and carry the matter before the legislature, with a proposition to float a loan large enough to build the roads now.

The report of the president of the superior board of health (Exhibit C) presents a general history of that organization and some observations on the character of its duties, which are far-reaching and of the utmost importance to the people, to whom many of the requirements of the board are so utterly opposed to the customs and habits of their lives that they are disposed to resent their enforcement. Nevertheless, the board is making substantial progress in a great work.

The report of the president of the board of charities (Exhibit D) gives an insight into the character and progress of the work of charity undertaken for the benefit of the afflicted adults and helpless orphan children of Porto Rico. I have taken deep personal interest in the operations of this board, and am well pleased with the result of its efforts to do the greatest amount of good possible with the means at its disposal, which are too limited for the best results, but which will be, I feel assured, increased when all the facts are known to the legislature.

The report of the deputy commissioner, as chief of bureau of agriculture and mines (Exhibit E) with tabulated statements showing acreage of cultivated and uncultivated lands (1), and mining claims granted (2), inclosed, conveys some interesting information, and contains valuable suggestions concerning the agricultural and mining industries of the island.

Respectfully submitted.

W. H. Elliott,
Commissioner of Interior of Porto Rico.

Hon. Ethan Allen Hitchcock,
Secretary of the Interior, Washington, D. C.

Exhibit A.

Location, extent, and classification of public lands in Porto Rico transferred by Spain to the United States, by virtue of the treaty of Paris, December 10, 1898.

Names of the towns and barrios.	Names of properties.	Number of cuerdas.	Class.
Adjuntas:			
Barrio Tanamá		100	
Aibonito:			
Barrio Cuyón		615	Brush.
Arecibo:			
Barrio Hato-viejo		200	
Do		100	
Barrio Cambalache, isle Garrochales, and Palmas altas.	Caño Tiburones		
Bayamon:			
Barrio Guaraguao	Los Oficiales	70	Inferior.
Cabo Rojo:			
Barrio Boquerón		297.50	Brush.
Barrio Salinas		109	
Barrios Guanajibo, Jagua, Puerto Real, and Boquerón.		386	Do.
Barrio Guanajibo		15	
Caguas:			
Barrio Beatriz	Cuchilla del Pelado y la Vaca muerta.		
Cayey:			
Barrio Guabate	Monte Santana, Cuchilla del Pelado y de la Vaca muerta.	500.75	Woodland.
Barrio Farayón			
Ceiba:			
Barrio Macho		119.75	
Barrio Guayacán		230	
Barrio Rio-arriba	Monte Sierra de Luquillo	4,561.50	Brush.
Do	Islote de Cabra	89.50	Do.
Do	Sierra	534.50	
Do	Islote de Cabra de afuera	97.75	Broken.
Ciales:			
Barrio Toro negro		100	
Do		30	
Barrio Hato Viejo	Monte Arroyo	891.25	Woodland.
Barrio Cordilleras	Cimarrones	535.50	Do.
Barrio Frontón	Sumideros	891.25	Do.
Barrio Toro negro	Sierra	1,249.75	Do.
Barrio Pozas	Zanjones	891.25	Do.
Barrio Toro negro		34.25	
Do		66.25	
Coamo:			
Barrio Cuyon	Pacana	140	

Location, extent, and classification of public lands in Porto Rico, etc.—Continued.

Names of the towns and barrios.	Names of properties.	Number of cuerdas.	Class.
Dorado		355	
Fajardo:			
Barrio Cabezas		150	
Barrio Rio-abajo	Sierra de Luquinno	4,170	
Do	Cuchilla de Palo quemado	713.25	Woodland.
	Islote Cabeza de Perro		
Barrio Guayacan	Islotes Indio, Tea, el Frio		
Guayama:			
Barrio Carite	Carite	1,017	
Do	Chucilla del Pelado, de la Vaca muerta, Santana y otros.		
Guayanilla:			
Barrio Boca	Cerro Berraco	400	Rocky.
Do	Cerro Criollo	800	Rocky and brush.
Barrio Pasto	Sierra Guilarte	1,139	Woodland.
Barrio Boca	Ballena	712.25	Brush.
Isabela:			
Barrio Arenales-alto		400	
Juana Diaz:			
Barrio Costa			Do.
Do	Islote de Berberia	30	
Barrio Guayabal	Las Cuevas	200	Calcareous.
Lajas	Parguera and Palmarejo	692	Brush.
	Puerto Pasage	70.50	Do.
Lares:			
Barrio Piletas		4,138	
Las Piedras:			
Sierra de Luquillo	Sierra de Luquillo	4,579	Do.
Loiza:			
Barrio Cubuy		600	
Sierra de Luquillo	Sierra de Luquillo	1,272	Do.
Luquillo:			
Barrio Pitahalia	Pitahalla	891.25	Woodland.
Barrio Sabana	Sabana	723.50	Do.
Barrio Mameyes	Mameyes	455	Do.
Sierra de Luquillo	Sierra de Luquillo	5,083	
Manati:			
Barrio Florida		20.25	
Maricao	Monte Maricao	699.75	Woodland.
		599.75	
Barrio Indiera Baja		250	
Mona and Monito Islands			
Naguabo:			
Barrio Santa Lima	Algodones	2.75	Broken, plain.
Barrio Pena Pobre	Baldios	254.50	Broken.
Barrio Rio Blanco	Sierra Luquillo	1,785.25	Woodland.
Patillas:			
Barrio Mulas	Cuchilla del Pelado y Vaca muerta.		
Penuelas:			
Barrio Rusio	Cerrote	160	Second and third.
Barrio Tallaboa		443	Woodland.
Ponce:			
Barrio Anon	Monte Anon	1,160.50	
Caja de Muertos Island		190.75	
	Quebrada del agua	40	Brush.
Puerto		70	
Penon		10.75	
San Patricio		89.50	
Do		92	
Do		138	
Do		100	
Punta los Machos	Baldios		
Rio Grande:			
Barrio Guzman	Nacimiento Canovanas	4,430	Broken.
Do	Lazaro	4,462	Do.
Do	Yunque	3,307	Do.
Yarar	Guzman	3,570	Woodland.
	Finca del Estado		
Rio Piedras:			
Barrio Anon	Monte Anon	1,660.50	
Sabana Grande	Peladas y Saco	2,790.25	Brush.
Tabonucos		493.50	
Barrio Santana	Baldios		
Salinas:			
Barrio Lapa		310.75	Broken.
Quebrada Yegua		357.25	Woodland.
Do	Cerro Aponte	200	
Aguirre	Rosada y Potosi	340	
San German:			
Parguera and Palmarejo		375	
Costa		70	

Location, extent, and classification of public lands in Porto Rico, etc.—Continued.

Names of the towns and barrios.	Names of properties.	Number of cuerdas.	Class.
Santa Isabel:			
Caracoles		119.75	
Puerto Jauca, Punto Balaju e islas adyacentes.		119	Brush.
Isla del Puerco		117.75	
Utuado:			
Vivi arriba	Jauca	534.50	Woodland.
Paso Palma	Cerro Morales	327.27	Do.
Yagueay arriba	Morrillas o Morrilos	1,783.75	Do.
Mameyes	Alto seco	534	Do.
Barrio Don Alonso	Altura del Palmar	891	Do.
Caguanas	Cordilleras	21.43	Rocky.
Barrio Angeles	Sumideros	257.75	Woodland.
Do	Las Nueces	178.75	Do.
Norzagaray		400	
Jayuya		56	
Do		200	
Mameyes		400	
Mameyes abajo		60	
Vivi arriba		71.25	
Paso Palma		19.75	
Do			
Vega Alta:			
Pugnado afuera	Los oficiales de Milicia	200	Brush.
Do	Franceses	600	Do.
Vieques:			
Puerto Diablo	Cabeza del Este	2,545.25	Broken.
Punta Arena	Cerro Pirata	891.25	Do.
Puerto Diablo		302.25	
	Cayo Real y Tierra	202.50	Calcareous.
	Cayo carenero	231.50	
Culebra Island			
Yauco:			
Frailes, Ranchera, and Almacigo alto.	Peladas, Piedras gordas, and Quebrada fria.		Rocky.
Alto Criollo		150	Bad.
Rubias y Naranjas		12.50	
Rio Prieto		103	
	Quebrada Peces	100.25	
Guanica	Manglillos, Afiljidos Puerto de Guanica.	180	
Susua Almacigo		100	
Guanica	Susua y Barina baja	246.50	
	Montalva	236.75	Brush.
Barina Baja		1,199.75	
Guanica	Cobanas	100	Do.
Barrio Guanica	Baldios	2,000	
Barrio and Puerto de Guanica	Baldios	2,000	Broken.
ADDENDA.			
Ciales:			
Barrio Cialitos	Vega Grande	713.50	Woodland.
Swamp lands.			
Bayamon:			
Barrio Catano	Cienega de la Mar	704.50	Mangrove.
Do	Punta Catano, Ensenada de Pueblo viejo Cano S. Fernando.	1,381	Do.
Cabo Rojo:			
Barrio Boqueron	Placeres	150	Do.
Llanos Costa	Barrancas		Do.
Barrio Pedernales		50	Do.
Barrio Guanajibo	Albufera Joina, Cano Da. Isabel La Llave.	384	Do.
Carolina:			
Barrio Hoyo Mulas	Laguna Pinones, Cano Hoyo Mulas.	890.25	Brush.
Barrio Cangrejos	Manglar, Mata redonda Cano San Jose.	112	Do.
Barrios Torrecilla and Hoyo Mulas.	Laguna Torrecilla	356	Do.
Ceiba:			
Barrio Rio arriba	Canuelas, Aguas claras	400	Do.
Barrio Macho	Manglar puerto y Playa Macho	300	Do,
Barrio Rio arriba	Manglar ensenada honda	230	Do.
Fajardo:			
Barrio chupacallos	Costa		Mangrove.
Barrio Quebrada vuelta	Santa Rita, Quebrada honda, Fortuna.		Do.
Cabezas	Manglar Caoba, laguna Soroco y grande.	150.50	Do.

Location, extent, and classification of public lands in Porto Rico, etc.—Continued.

Names of the towns and barrios.	Names of properties.	Number of cuerdas.	Class.
Guayama:			
Jobos	Jobos, Mareas, Cano grande, Punta Caribe.	399.25	Brush.
Guayanilla:			
Barrio Puerto	Manglar del Puerto	175	Do.
Loiza:			
Barrio Hoyo Mulas	Pinones, Hoyo Mulas	763	Do.
Do	Mata redonda, Hoyo Mulas	1,272	Do.
Mayaguez:			
Barrio Guanajibo	Manglar del barrio de Guanajibo.	101	Do.
Naguabo:			
Barrio Daguao	Manglar Boca Daguao	60	Do.
Penuelas:			
Isla del rio	Manglar de la Costa	22	Do.
	Manglar de Aguas dulces Parguera, Palma, Caribe Rio, Mura Longas.	20.25	Mangrove.
Ponce			
Rio Grande:			
Zarzar	Manglar Patillas, Boca	250	Do.
Rio Piedras:			
Martin Pena	Manglar Bahia San Juan	777.75	Do.
Salinas:			
Pajaros	Mulas, Mata Corsario	140	Brush.
San Juan:			
San Juan and Santurce	Bahia, cano Galo, San Antonio, Mata, Caracoles.	843.75	Mangrove
Martin Pena	Orilla norte, San Jose	63.50	Brush.
Yauco	Manglar Costa de Guanica	780	Do.

VACANT LOTS.—SAN JUAN.

Number.	Street.	Square meters.
	Plaza del Mercado	3,082.51
1	Presidio, Puntilla	253.71
2	do	190.86
3	do	298.40
4	do	300.57
5	do	194.30
6	do	233.53
7	do	297.66
8	do	497.67
9	do	393.46
10	do	1,421.17
11	do	130.20
12	do	44.98
13	do	305.98
14	do	854.90
15	do	224.78
16	do	217.98
17	do	177.47
18	do	25.28
30, 32, 33, 34, 45, 46	Barrio Marina	2,674.72
15 to 27	Marina, Carbonera	4,181
	Mata redonda, Puerta de Tierra	9,868.85
	Puerta de Tierra	1,950
	do	1,950
	do	1,950
	do	1,935
	do	1,770
	do	1,770
	do	378

[EXHIBIT B.]

REPORT OF THE BOARD OF PUBLIC WORKS OF PORTO RICO, SEPTEMBER 15, 1900.

BOARD OF PUBLIC WORKS OF PORTO RICO,
San Juan, P. R., September 15, 1900.

SIR: In compliance with your letter of August 30, 1900, I have the honor to submit herewith a report upon the scope, operations, and condition of the board of public works of Porto Rico for the period from May 1, 1900, to date.

Before entering into a detailed statement of the main subjects of the report, it will not be amiss to give a short retrospective account of the public works.

Up to about the year 1860 the public works, then of comparatively small extent and principally military in character, were under the supervision of military officers of the Spanish army, assisted by civilians, the chief of the latter possessing the title of director. It seems that the first organization took shape about 1865, the civil engineers assuming entire control, except as to military works, with the director as head of the department.

The organization of the public works remained thereafter under the secretary for the colonies (ministerio de ultramar), the Governor-General of the island, and the engineer in chief of the public works (jefatura de obras publicas) until the autonomical constitution of the island was promulgated, in February, 1898, when the public works were directly under the secretary of the public works and communications of the insular government.

By a royal order, dated May 21, 1881, a general law of public works was enforced, similar to those in existence on the Peninsula, which were very elaborate and lucid, though somewhat cumbersome, appertaining to the plans, construction, operation, and preservation of works, mines, telegraphs, and forests.

The creation and execution of these works were left to four different bodies of administration, subject to a general supervision by the secretary of the colonies, the Governor-General of the island, and the chief engineer of public works.

Their classification was as follows:

First, works in charge of the State, which embraced high roads and military roads, constructed with general funds; the improvement of navigable rivers; harbors of general interest, of refuge, and of military interest; light-houses and buoys; drainage of marshes, lakes, and inlets; construction, preservation, and operation of railroads of national interest and of general interest, exercising a supervision over the plans, construction and operations of the latter; and civil buildings of the State administration.

Second, works in charge of the province, which included roads constructed with provincial funds—nearly of the same class as military roads; provincial ports not for commerce of general interest; the sanitation of lakes, marshes, and inundated lands of special importance only to the province, and public buildings for the service of provincial administration.

Third, works in charge of municipalities, including local (county) roads; water supply of towns; the drainage of lakes and unhealthy lands; ports of merely local interest; the construction and preservation of buildings of municipal administration, and the maintenance of streets, squares, and boulevards as thoroughfares.

Fourth, works that might be undertaken by individuals or companies, by special provision under the general law, as highroads and railroads; ports; irrigation and navigation canals; drainage of lakes and marshes; sanitation of unhealthy lands, and water supply of towns.

This shows at once the wide extent and scope of the organization, and when the Americans took possession of the island, all public works enumerated in the above schedule were either projected and executed by the jefatura of public works, or more or less controlled by its personnel.

After the American occupation the public works were reorganized under General Brooke, the first military governor of the island, and by the secretary of the interior, under the same title, "jefatura de obras publicas." Since then, and from time to time as the contingencies of the state of finances required, and mainly, however, to "introduce American methods of business and progress," as General Henry puts it in one of his general orders, many modifications were made in the organization of the public works, all tending more or less to a simplification of the work and to a more centralized administration, the result being a considerable decrease in its former manifold duties.

The light-house service was separated from the public works and placed in charge of the United States Navy by General Order No. 4, dated January 17, 1899, issued by the second military governor, General Henry.

On February 9, 1899, by General Order No. 15, Maj. Francis L. Hills was appointed chief of the bureau of public works under the newly appointed head of the department of the interior, of which the public works were to be a subdivision.

By General Order No. 21, 1899, the "Junta de obras de Puerto de San Juan," having had charge of the harbor works since about 1882, under the supervision of the public-works department, was abolished, as "not being compatible with American methods," and its duties were transferred to a navy officer and to an engineer officer of the Army, as inspector and engineer, respectively.

To "still simplify administration and reduce expenses" General Order No. 116, published August 12, 1899, discontinued the department of the interior with which the bureau of public works, was connected, and placed the latter under the control of a board of public works to which were assigned duties respecting the construction, repair, and maintenance of military and country roads, including bridges, and of public buildings used for civil purposes; also the improvement and maintenance of harbors and establishment of harbor lines; the supervision of construction of wharves, docks, and slips, and the construction, repair, and maintenance of light-houses and beacons. The harbor works were also discontinued as a separately organized body and were retransferred to the public works, but the inspection of light-houses and buoys remained in the hands of the United States Navy.

The board of public works constituted under this order consisted of Capt. W. V. Judson, United States Corps of Engineers, as president, and Mr. F. L. Hills and Mr. Juan B. Rodriguez, civil engineers, as advisory members. Mr. Hills shortly after resigned on account of ill health and Mr. P. Fernandez, principal assistant engineer, was assigned to his place.

Many extensive and elaborate improvements were inaugurated by this board. With the exception of a few Spanish contracts all other contracts for new roads and bridges—of which a detailed statement is given below—that were completed during the present year, or that are now in force, were made under its direction, the personnel of the board remaining unchanged until the advent of the civil government on May 1 last, when the undersigned, by General Order No. 102, dated April 30, 1900, was appointed president of the board.

By the Foraker bill, which became a law on May 1, 1900, the light-houses, buoys, harbor areas, and navigable rivers, heretofore in charge of the public works, were transferred to United States authorities, the new civil government retaining control of public bridges, road houses, water powers, highways, unnavigable streams and the beds thereof, subterranean waters, mines or minerals under the surface of private lands, property of various harbor boards, harbor shores, slips, docks, and reclaimed lands.

Of these works public roads, bridges, and buildings, harbor lands and shores, and the duties, responsibilities, records, and employees of the board of public works, with duties as now, were transferred to the newly created department of the interior by General Order No. 102, dated April 30, 1900, the commissioner of the interior o be the chief executive officer.

Since the new organization went into effect the board has carried on its work under Spanish laws and ordinances, as altered and modified subsequently by military orders and decrees, and in conformity with such instructions as are from time to time added by the head of the department.

The personnel in the office and in the field up to date changed little since the island came into possession of the United States. There was necessarily after that time some infusion of American blood, for business reasons as well as to conform to the policy inaugurated and stated by General Henry in his circular letter No. 1, issued on March 10, 1899, requiring that "in the construction of all works and improvements upon this island by the United States Government, or under its supervision, native Porto Ricans possessing proficiency will, when practicable, be employed;" but the number of native employees in the public works is certainly still a very fair one, being 84 per cent, who receive 86 per cent of the salaries paid out every month.

In giving now a condensed statement of all the works carried on by and under the supervision of the board of public works it is necessary to refer first to highways and bridges, which constitute the principal part of its labors under the recent assignment of duties.

Roads and bridges.—The roads constructed under the Spanish Government are as follows:

	Distance.	Approximate cost.
	Miles.	
1. San Juan to Ponce Playa	82.46	$1,879,340
2. Cataño to Toa Alta	14.88	239,767
3. Añasco to Pezuela Bridge, through Mayaguez	14.26	202,080
4. Ponce toward Adjuntas	9.3	152,320
5. Rio Piedras to Rio Grande	16.12	265,200
6. Utuado toward Arecibo	3.1	99,000
7. San Sebastian toward Moca	1.86	31,320
8. Cayey to Guayama	15.74	615,600
Total	157.72	3,484,627

These roads formed certain portions of a system for roads to be constructed on the island under the so-called "approved plan." It is not very clear what was understood under this term. The nearest explanation is that after the necessity for a road became apparent, by petitions to or pressure brought upon the department by the municipalities directly concerned, or by the exigency of military service and of public traffic, the plan of the road was submitted to the Cortes at Madrid for approval. Under the general law of public works and highroads no funds could be expended on any road which was not included in the provisions of said law.

The approval of the roads enumerated below was obtained during the period from 1868 to 1896. In the course of time these roads were designated by numbers and are so carried now on the map, as follows:

	Kilometers.
Road No. 1, San Juan to Ponce	134
Road No. 2, Cataño to Mayaguez	164
Road No. 3, Mayaguez to Ponce and to Guayama	130
Road No. 4, Cayey to Arroyo	33
Road No. 5, Caguas to Humacao Playa	58
Road No. 6, Ponce to Arecibo	82
Road No. 7, Rio Piedras to Fajardo	51
Road No. 8, Lares to Aguadilla	42
Road No. 9, Bayamon, via Comerio, to No. 1	49
Road No. 10, Bayamon, via Corozal, to Barros	48
Road No. 11, Manati, via Ciales, to Juana Diaz	61
Road No. 12, Barros to Coamo	17
Road No. 13, from near Mayaguez, via Adjuntas, to Aibonito	96
Road No. 14, Mayaguez, via Lares, to Arecibo	61

This is a total of 1,112 kilometers, or 690 miles, of which, as stated above, 255 kilometers, or about 158 miles, were completed at the time of the American occupation. The main artery of this network of highways, the so-called military road between San Juan and Ponce, was begun about 1868 and completed in 1888.

The finished roads were being maintained under a system very much in vogue in Europe—a permanent force consisting of sobrestantes (overseers), capataces (foremen), camineros (sectionmen), and peons (laborers), under the direction of an engineer of maintenance. The average length of supervision and road work assigned to a sobrestante is 25 kilometers, subdivided in sections of from 8 to 14 kilometers in length, in charge of a capataz, with 1 caminero for every 3 kilometers. These men are paid by the month; the peons working under them, and whose number is increased or decreased as the service may require, are paid by the day, their number seldom exceeding a total of 400 per day on all the roads.

This system is still pursued at the present day. Since July 1, however, younger and more active men have taken the places of several sobrestantes too old to fall in with the new ways, and the roads are now arranged into a north and south division, with a division engineer in charge of each and headquarters at San Juan and Ponce, respectively.

On May 1 last, when the department of public works was transferred to the civil department, the following contracts for the construction of permanent roads and two large concrete bridges were in force. Some were nearing completion; on all work was in progress.

Extent of contract.	Miles.
No. 1, on road No. 6, Arecibo to Utuado	2.1
No. 2, on road No. 6, Adjuntas to Ponce (Defendini)	0.3
No. 3, on road No. 11, Manati to Ciales (first section)	2.8
No. 4, on road No. 7, Rio Piedras to Fajardo	4
No. 5, on road No. 8, Moca to San Sebastian (first section)	2.5
No. 6, on road No. 6, Caguanitas Bridge to Arecibo	3
No. 7, on road No. 6, Utuado to Adjuntas	2.9
No. 8, on road No. 6, Adjuntas to Utuado	4.3
No. 9, on road No. 6, Adjuntas to Ponce	1.6
No. 10, on road No. 4, Guayama to Arroyo	4.1
No. 11, on road No. 8, Moca to San Sebastian (second section)	4
No. 12, on road No. 6, Arecibo to Utuado	2.8
No. 13, on road No. 6, Utuado to Adjuntas	6
No. 14, on road No. 6, Adjuntas to Ponce	2.4
No. 15, on road No. 10, Toa Alta to Corozal (third section)	3.1
No. 16, on road No. 9, Comerio northward	4.1
No. 17, on road No. 5, Caguas to Humacao	11
No. 18, on road No. 5, Humacao Playa to Caguas	13.5
No. 19, on roads Nos. 13 and 14, Mayaguez, Las Marias, and Maricao	9
No. 20, on road No. 10, Toa Alta to Corozal (second section)	2
No. 21, on road No. 6, Arecibo to Utuado	8
No. 22, on road No. 11, Manati to Ciales (second section)	2
No. 23, branch road, Ciales road to Morovis	7.3
No. 24, two concrete steel bridges, Jacaguas and Guayo rivers, respectively, total length	Feet. 674

Contracts Nos. 1, 2, 3, and 4 are so-called Spanish contracts, prepared and entered into before the American occupation of the island. They were paid with insular funds, and at this date are completed except No. 1.

Contracts Nos. 5, 6, 7, 8, 9, and 10 are being paid for from the "War Department emergency fund" allotment of $200,000 made in 1899, and contracts Nos. 11, 12, 13, 14, 15, 16, 17, 18, and 19 from the appropriation of $600,000 for "Refunding customs revenue collected from Porto Rico," enacted March 24, 1900. These two series of contracts remained in the hands of the United States authorities after May 1 last and are now being executed under the supervision of the United States Engineer Department.

Contracts Nos. 20, 21, 22, 23, and 24 are being paid out of insular funds and are being completed under the direction of the board of public works.

In several cases one or more of the above contracts are let to the same contractor at a lump sum, covering two or more of the above roads adjacent to each other or even widely separated.

The progress made to date on the contracts in charge of the board of public works since May 1 is as follows:

Contract No. 1, for constructing a section about 3½ kilometers long of road No. 6, between Arecibo and Utuado, with Carlos de Ereño: The contract is dated May 11, 1898, at a time when the Spaniards were still occupying the island, and is to be completed June 10, 1901. Work did not begin until November, 1899, and is progressing rather slowly, principally on account of the heavy rock excavation of which it consists. The total amount involved in the contract is $36,520, and up to date the contractor has earned about one-half of it.

Contract No. 2, for constructing a section about one-half kilometer long of road No. 6, between Adjuntas and Ponce, with Carlos de Ereño: This is also a Spanish contract, and was completed on August 28, 1900, at a cost of $17,451.21. Its comparatively great cost must be accounted for by the inaccessibility of its location, which was near the top of the high mountain ridge dividing the north and south of the island, and the heavy rock excavation and building of many expensive retaining walls and masonry culverts required in so short a distance.

Contract No. 3, for constructing a section of 4.6 kilometers long of road No. 11, between Manati and Ciales, with Carlos de Ereño: This is another Spanish contract, and was completed July 28, 1900, at a total cost of $40,919.91.

Contract No. 4, for construction of a section 6.7 kilometers long of road No. 7, between Rio Piedras and Fajardo: This was also a Spanish contract, and was completed July 11, 1900, at a total cost of $57,145.99. The road of which this section forms a part follows the base of the foothills skirting the northern coast.

The great difference in the cost per kilometer of the roads built under contracts Nos. 1 and 4 shows at once the great variety in the general character of the country through which roads on this island are to be constructed. They may be accepted as good illustrations of the maximum and minimum cost involved in road construction.

Contract No. 20, for constructing a section 5.3 kilometers in length of road No. 10, called the San José section, between Toa Alta and Corozal, with André J. Canton: It was dated November 29, 1899, and was to be completed in ten months. The section was finished on August 4 last, and is awaiting the delivery of about 400 cubic meters of broken stone for its maintenance before final settlement is made. The amount expended to date is $24,565.61. It is one of the cheapest and one of the best sections of road built recently.

Contracts Nos. 21, 22, and 23, for constructing sections of the following roads: No. 6, Arecibo to Utuado, 12.8 kilometers; No. 11, Manati to Ciales, 8.1 kilometers; and country road from Ciales road to Morovis, 11.9 kilometers, were let at a lump sum of $165,000 to the Central Contracting Company, of New York. The contract is dated December 30, 1899, approved February 13, 1900, and is to be completed in eighteen months. The grading on the road between Arecibo and Utuado, which, near the upper terminus, required very heavy rock excavation, is nearly finished. On the road between Manati and Ciales about 50 per cent has been done, and on the branch road to Morovis about 20 per cent. Three large bridges on these roads have been begun. The total amount expended on this contract is about $64,000. At the present rate of progress the work should be completed about February next.

Contract No. 24 is dated December 4, 1899, and was made with the designer of the bridges, E. Thacher, of Paterson, N. J., upon designs, plans, and estimates furnished by the contractor, for two concrete steel bridges, one over Jacaguas River, of a total length of 404 feet, and one over Guayo River, 270 feet long, on road No. 1, near Juana Diaz. The design is for monolithic structures of concrete, reenforced by longitudinal steel ribs of three spans each. The estimates were carefully scrutinized by competent engineers and, after adding 15 per cent profit for the contractor, were considered quite low and acceptable to the military government at the stipulated price of $85,121 for both bridges.

Excepting some delay and considerable extra expense incurred last spring shortly after work was begun, on account of floods and heavy rains, the work has progressed satisfactorily. The three arches of Jacaguas bridge are nearly finished, and the piers and abutments of Guayo bridge are up to above low-water level. If the weather remains favorable, both bridges should be completed before February next. The total amount expended to date is $52,000.

Besides the contracts for new roads and bridges cited above, the board of public works is also carrying on the following special work, either by contract or by day labor, in connection with the road service. In nearly all cases, and whenever it is practicable to do so, bids for the furnishing of the necessary material and labor are asked for from responsible parties in the vicinity where the work is to be done, and only when the bids received are known to exceed the estimates of the engineers purchases are made and the work is done by the employees of the department.

A number of iron panel bridges purchased under the Spanish Government and stored at Ponce, which only by periodical expensive painting could be prevented from going to ruin, are now being erected on some of the new roads that have been completed or are nearing completion. Two spans of 15 meters each have been erected over two rivers on road No. 8, San Sebastian to Moca; two of the same length are now in course of erection on road No. 4, Guayama to Arroyo; and the foundations are now being prepared for a span of 80 meters across Manati River and for one of 35 meters across Cialitos River, on road No. 11, Manati to Ciales. The remaining spans on hand have been assigned to different localities on other roads and will be erected in the course of the present year as occasion arises.

It should be stated here incidentally that several of the largest bridges built under the Spanish Government and carried away or destroyed entirely by last year's hurricane, such as the bridge over Caguitas River near Caguas; the Reyes Catolicos bridge over the La Plata River near Toa Alto; one near Utuado on road No. 6, and the bridge at Carolina over Loiza River, require rebuilding, either at the same localities or other less exposed points. Travel over the roads upon which they were situated, except at Caguas, where a temporary wooden bridge has been built, is at times interrupted for several days after heavy rains which make the fords impassable.

Another class of special work on the roads which can never be foreseen and, therefore, properly estimated, is the removal of land slides, the restoring of embankments, and the repairing of damages to bridges and culverts on finished roads, caused by heavy rains and floods. Early in the spring of this year much damage of that character occurred on roads Nos. 1, 4, and 6, and while an effort is being made generally to make the roads passable by the regular force employed as soon thereafter as possible, some were of such an extent that on a few work is still progressing under contract and by day's labor.

During the past two months the board of public works has been entrusted with repairs of roads, principally in the interior of the island, which are not on the approved plan, but which form the only communication for the people in the mountains leading to one or another of the nearest main roads. These roads are in the coffee and tobacco districts, which need good roads as much as the rich sugar districts near the coast; but their primitive condition and the topography of the country makes them very expensive of construction and repairs. Petitions for their improvement are received every day. Under the pressing needs of the moment and as a measure of relief to alleviate the great distress prevailing in these districts, repairs have been ordered and are now in progress on the roads from San Lorenzo to Caguas and from Cidra to Las Cruzes, both giving an outlet upon the military road, the main road of the island. About 100 men are employed daily on each road, preferably those that have families, but the demand for work is so great that many have to be refused. The work is carried on under the supervision of an experienced road engineer, at such points which need to be reconstructed or improved to make the whole road useful for ox teams to pass over in fair weather. Each man receives 30 cents per day (a small amount, but doing a great deal of good).

To give work to the many unemployed near the city of Ponce, about 200 men per day, heads of families, have lately been set to work in breaking stone for macadam to be used in the maintenance of roads leading into Ponce. They are employed in several quarries in the vicinity, and earn 40 cents for each cubic meter of stone broken.

The amount expended to date in the relief work as enumerated above is about $1,500.

I defer until a later opportunity to describe, in a report destined to be published, all the engineering features connected with the construction of roads and bridges on this island, the details of plans, location, and other data valuable to engineers and to those interested in the topography of the country through which they are being built. Such a description would necessarily require illustrations and drawings that can not be made in a short time, and it will serve the purpose better to await the completion of the works now in progress.

Public buildings.—The following is a list of public buildings in charge of the board of public works on May 1, 1900, and claimed by the State:

Location.	Description.	Occupied by—
San Juan	Diputación building, on San Francisco street, between Cristo and San Jose streets.	Post-Office, State, and War Department offices.
Do	Beneficencia building and grounds, west side of the city on the road to "El Morro."	Lunatic asylum and United States district court.
Do	Girls' Charity School, Santurce, Madres Station.	Refuge for orphan girls.
Do	Convent of San Francisco, on San Francisco square.	Used as a Catholic church.
Do	Convent of Santo Domingo, Santo Cristo street, near Luna.	Do.
Do	Nos. 3 and 5 Fortaleza street	State and War Department offices.
Do	Intendencia building, Alphonso XII square	State offices.
Do	Public works warehouse, Marina	
Do	Custom-house	
Do	Revenue officers' headquarters	
Do	Health officers' headquarters	
Do	Penitentiary	
Do	Arsenal, buildings for offices, residences, and chapel.	
Do	Harbor master's headquarters	
Do	Lazaretto, Cabra Island	Refuge for lepers.
Do	No. 69 San Francisco street	War Department offices.
Do	Boys Charity School, Santurce, Institute Station	Refuge for orphan boys.
Do	San Francisco Barracks	War Department.
Do	Model Training School	
Do	Executive Mansion	
Do	Audiencia building, San José square	
Do	Quarantine station, Miraflores	
Ponce	Custom-house	
Do	Harbor master's headquarters	
Do	Public works building, on Atocha street	
Do	Public works warehouses, at the Playa	
Mayaguez	Custom-house	
Do	Agronomic station	
Aguadilla	Office of the captain of the port	
Do	Office of the registrar	
Do	Harbor master's headquarters	
Fajardo	Custom-house	
Humacao	do	
Guayanilla	do	
Arecibo	Old post-office building	
Caguas	Post-office building	
Rio Piedras	Agronomic station	
Culebra Islands	Delegate's house	
Do	School buildings	

The ownership of these buildings by the insular government appears to be well established; there are, however, other buildings and grounds on the island now occupied by the United States War Department, by ecclesiastical bodies and municipalities, which are claimed by the island, the title to which remains to be made clear by judicial authorities.

The model and training school referred to in the above list, which was a wooden building, was destroyed by fire during the night of July 1 last year.

Since May 1 the following repairs have been made on various buildings:

Girls' Charity School, Santurce.—The rear extension was completed, which consisted of concrete floor, basement room, and porch; erection of 7 partitions, second floor rooms; flooring first and second story porches; blinds on first floor porch; butler's pantry, with sinks and water, adjoining dining room; painting entire interior and whitewashing exterior of extension. Repairs to plaster and shutters. New stairs placed between first floor and basement. In old chapel the altar was removed. Floor of balcony was extended across entire room. Plaster repaired in both upper and lower rooms, both rooms painted. This building was without sanitary plumbing. All of the old water-closets have been removed and replaced with modern sanitary fixtures connected with sewer, and work has been commenced removing bath tubs. New laundry tubs are to be placed, likewise washstands for children, all of which have been ordered.

Insane Asylum and beneficencia building, San Juan.—Doors of four cells replaced. New floor laid in one room and on porch of men's section. New stairs built in both men's and women's section. Two sewers, stopped up, repaired. Ten new cells constructed in wing for female insane, each being connected with sewer and water, a bell rap being placed in floor of each cell. Partitions were erected and painted in room for United States court. New entrance made for court. Two water-closets and toilet rooms set up for court use.

Boys' Charity School, Santurce.—Water fixtures placed in superintendent's rooms. Kitchen sinks, sewer, and cast-iron leader placed in southwest corner. Repaired plastering.

Diputación building, San Juan.—Roof leaks repaired. Changed entrance to post-office. Repaired locks.

No. 5 Fortaleza street.—New water-closet set up. Kitchen sink and water fixtures placed in suite of rooms occupied by the Weather Bureau.

Executive mansion, San Juan.—Placed on roof sentry box. Put up new flagstaff. Roof leaks repaired. Painted and whitewashed four rooms. Placed call bells and three awnings. Put up skylight into roof. Hung swinging doors in office board of education. Painted rear of building. Kalsomined part of main stairway. Whitewashed four rooms.

Intendencia building, San Juan.—Repaired locks and doors. Treasurer's office repaired. Repaired roof leaks. Erected new flagstaff. Placed call bells in auditor's office. Put up new shelving in ten rooms in basement. Suite of rooms on third floor fitted up for office of board of education. Laid new floors. Painted and hung new swinging doors. Porch at entrance was extended. Repaired floor hall. Laid concrete floor in storeroom of basement.

The total amount expended to date on these repairs and in taking care of public buildings is about $11,000.

Harbor works, lands and buildings.—Since May 1, 1900, after the harbor areas were placed under United States control, no work of any extent was carried on by this section of the bureau of public works, except some slight repairs along the water front of San Juan, consisting in keeping the pavement in order, and in repairing the roof of the custom-house shed, and in taking care of the property and material. The first-named work is done with prisoners and at very little expense.

The grounds occupied by the harbor works on the extreme point of the Marina have an area of about 9,000 square meters, or approximately 2¼ acres. The buildings thereon consist of a large machine shop, containing many valuable machine tools, two large storehouses, one of brick, one of iron, several sheds, and a small house, the quarters for the watchman. Very valuable material is stored in these buildings in care of a storekeeper.

To the harbor works also belong two large sheds or "tinglados," erected on the harbor front; one is used by the customs service, the other by the Quartermaster Department. East of the latter shed extends a large area of ground filled in during Spanish times with material dredged from the harbor. This land will be very valuable in the future, but needs grading and improving and shore protection before it can be put to any use.

The floating plant formerly owned by the harbor works, and now in charge of this department, consists of 1 large endless-chain dredge, 1 dipper dredge, 1 tugboat of

300 indicated horsepower, 1 smaller one of 30 horsepower, 3 iron dumping scows, about 50 iron dumping cars, with about 1 mile of track, and several small boats. Most of this material is very old, and, having lain idle for many years, has very much deteriorated. The two tugs are in fair condition; the largest, the *Borinquen*, is kept in service in the harbor, principally to assist vessels in distress and to do towing, for which a certain tariff is charged, the proceeds being turned into the insular treasury. Her monthly expense is upon an average $290, nearly all of which she earns.

It is presumed that sometime in the future the elaborate plans made by the harbor engineers during the Spanish times and the board of public works for the improvement of the harbor, for a new sea wall along the water front, for a ship railway, for additional piers and docks, for a new custom-house and custom sheds, for reclaiming the lowlands adjacent to the navigable channels, will be carried out more or less under the direction or supervision of the public works department, at least so far as the works on the shore are concerned. The present law forbids any extension of its authority over the harbor area, however. It is not clear how some of these works can be carried on without a certain encroachment upon the harbor area; for example, in the reclaiming of lowlands, which generally require bulkheads to be constructed outside of low-water mark, behind which dredged material is deposited; or in the extension of piers, docks, and slips. It seems to me that some additional legislative action is absolutely necessary to more clearly define the authority of the public works department and that of the United States authorities in the supervision and construction of the above works, as well as in the establishment of wharf and pier lines, which are generally located outside of high-water mark and some distance from the shore. Certainly in the latter case the board of public works should be empowered to share equally with those in charge of the harbor areas the responsibility of determining the limits of such improvements.

Very respectfully,
A. STIERLE,
President Board of Public Works.

Hon. W. H. ELLIOTT,
Commissioner of the Interior, San Juan, P. R.

[EXHIBIT C.]

REPORT OF THE SUPERIOR BOARD OF HEALTH.

OFFICE OF THE SUPERIOR BOARD OF HEALTH OF PORTO RICO,
San Juan, P. R., September 15, 1900.

SIR: In accordance with your request dated August 30, 1900, I have the honor to submit the following report:

On April 30, 1900, General Order No. 102 was issued by General Davis, military governor of Porto Rico. Paragraph IV, section (f), recites that "the duties, responsibilities, records, and employees of the superior board of health, with duties as now, are transferred to the department of the interior. The board as reconstituted will consist of the following persons: The commissioner of the interior, the commissioner of education, Dr. Ricardo Hernandez, Mr. Fidel Guillermety, and Dr. William Fawcett Smith (secretary and treasurer). The salary of the secretary and treasurer is fixed at $1,800 per annum."

The first meeting of the board was held in the offices of the board, 5 Fortaleza street, on May 4, 1900, all the members being present, with the exception of Señor Guillermety, who was absent in Europe, and organized by the election of Dr. Coll y Toste, acting commissioner of interior, as president.

Arrangements were made as to the time and place of future meetings, and the meeting was then adjourned to May 18, 1900. On May 10, a special meeting was called to take action respecting the outbreak of a few cases of smallpox in the Barceloneta district. Full instructions were sent to the local authorities, together with an ample supply of vaccine lymph, and in a few days it was reported that the outbreak had subsided.

At this meeting a committee, consisting of Drs. Groff and Hernandez, was appointed to visit and report on the vaccine station near Martin Peña, with the view of ascertaining its capacity for meeting any probable emergency, and also whether it would be advisable to renew from the United States the virus with which to vaccinate calves. At the next meeting the principal business was the discussion of an elaborate report by a committee of the former superior board of health on the water supply of San Juan. The investigation was made by Drs. Hernandez and Lavinder, and was exhaustive and interesting.

The suggestions made as to the improvements considered necessary were approved by the board and a communication was sent to the town council urging their adoption at the earliest possible moment. The water supply of San Juan is not entirely satisfactory, and never can be unless the intake is removed to a point higher up the river than the present point, and, moreover, the supply will be inadequate when a modern system of drainage, domestic and public, is introduced. But for any material change in the present waterworks we must wait a considerable time, for the municipality is practically bankrupt, and its credit is decidedly shaky.

A report from Dr. Berkeley, chemist to the board, was read, in which he gave the results of his work in the analysis of various wines and other articles of food. Vinegar, butter, and wines were all found to be generally sophisticated, and the board at the present time is engaged in the difficult task of detecting and punishing the violations of the laws against adulteration.

At this session of the board Dr. Salvador Carbonell took his seat as an advisory member, having been appointed by the governor so to act in accordance with a request of the board to that effect.

The budget for the fiscal year 1900–1901 was presented by the treasurer, the amount estimated for being $11,817, but in consequence of changes in arrangements for printing and for postage this estimate was modified and sent in as follows: For salaries $8,596, for traveling expenses $1,500, and for contingent expenses $1,008, the total amount being $11,104. In this estimate is included the salary of a medical inspector, which was fixed at $1,200. The post of inspector was duly advertised for, and Dr. J. M. Saldaña, of Mayaguez, was unanimously appointed at a meeting of the board held on July 18, 1900. Since his appointment he has been kept constantly on the move, making various investigations as representative of the board, and has done excellent work in several directions. Many tons of food have been destroyed as unfit for use, and a strict supervision has been held over drug stores, and in general over all stores selling food or medicines. Complaints as to damage from nuisances caused by sugar factories and distilleries have been examined, and matters are in a fair way toward a satisfactory settlement. The question of cemeteries has occupied much time and attention on the part of the board, and in many places the difficulties in the way of carrying out General Order 69 have been very great. The universal bankruptcy of the municipalities is pleaded as a reason for delay; but meanwhile the condition of the majority of the cemeteries is such that the board must insist upon some measures, however temporary in character, being taken to remove the danger to health and offense to decency that are involved in present arrangements. In many districts the people suffer great hardship through having to carry their dead to the central cemetery over many miles of rough trails that are frequently impassable for days at a stretch, and the consequences of delay in burial are of course revolting.

To relieve this state of affairs, the board decided to sanction the reopening of some of the old barrio cemeteries which have been disused for many years, provided that adequate guarantees be given for the care of the ground and for the registration of deaths. A circular letter on the subject together with a set of regulations for the guidance of the various local officials have been sent to each municipality, and copies thereof are hereto attached. It is believed that in a short time the benefits of the new system will be greatly appreciated, and the introduction of order and decency into cemeteries will be a lesson of far-reaching good.

From June 11 to June 23 examinations were held of candidates for licenses as physicians, pharmacists, and practicantes. In medicine and surgery 4 passed and 1 failed. In pharmacy 7 passed, 1 failed, and in minor surgery 1 passed and 1 failed. Any of the unsuccessful candidates are entitled to appear again for examination without extra fee after the expiration of six months. At date of this report there are now on the register 183 physicians and surgeons, 214 pharmacists, 35 dentists, 77 practicantes, 15 midwives, and 2 nurses. The standard for examinations is as nearly as possible that of the regents of the University of New York, and the board intends that this standard shall never be lowered, but rather increased.

The greatest difficulties as yet met by the board are in the execution of General Order No. 87, which provides for the registration of all patent, proprietary, or secret remedies, after the disclosure of their formulæ and the approval of the superior board of health. Several firms in the United States at once complied with the order, but the majority of manufacturers have either flatly refused compliance or else have ignored the whole matter. Two cases of violation of the order were brought before the local court in San Juan, but in each case it was decided that no offense had been committed by the seller of any unregistered medicine. The matter being one of great importance, involving the validity of all the military orders, by whose authority the board exists and acts, will be appealed to a higher court for decision as soon as possible.

The vaccine station, which is under the charge of the secretary as director of vaccination, is situated near Lecheria station, on the Rio Piedras Railroad, and was formerly used as an agricultural experiment station. It consists of about 8 acres of land on which are the buildings formerly used for the agricultural station. These are the property of the Government, but the land is leased from the estate of the late P. Ubarri at a rental of $108 per annum. Mr. B. Stebbings is the resident superintendent and carries on the work in an efficient manner. The average of 1,400 points is sent out weekly from here to the office of the board and from there sent out at short intervals to the various municipalities. Every demand made by the medical men of the island has been promptly and fully met, and it is believed that there would be no real difficulty in meeting any demand that could possibly occur in a community that was so thoroughly vaccinated as ours was last year.

As regards the health of the island, there is likely to be a great misunderstanding on the subject by those who look merely at the figures giving the vital statistics of any particular district, and the large mortality shown in some places would be deemed evidence of a severe epidemic, or at least of extraordinarily unhealthy conditions.

In Ponce, for instance, the mortality has been for a number of months a large and increasing one, but this is due to the fact that Ponce has been a center toward which the poor from all sections have flocked in order to obtain the relief that was so freely distributed by public and private agencies. In the month of August, 1899, the number of deaths in Ponce was 340, including 149 cases of drowning during the hurricane, but in August, 1900, the deaths numbered 681, the annual death rate amounting to 136 per 1,000. Now, on going into the question closely we find that almost all of this awful mortality was among the destitute who flocked in from outside, and who have no real right to be credited to the death rate of Ponce proper. The secretary of the board has already made a report on Ponce and the conditions there existing, and this document is on file in your office. It is much to be regretted that it has been found impracticable to carry out some of the suggestions made in that report, for the board thinks that nothing but radical measures will be of use in bettering present conditions. As yet, there has been no outbreak of epidemic diseases in Ponce, but if at any time this should occur, the material is there in abundance to allow of its unlimited spread, and no man can foretell the result in a community wherein sanitary conditions are wholly bad and mediæval in character. In the adjoining district of Adjuntas there is also an alarming state of affairs, but the conditions are in some respects different from those in Ponce. Adjuntas has not been a special center of gravitation toward which the outside population was drawn, and the awful death rate, amounting to 181.72 per 1,000 for the month of August, 1900, must be almost entirely charged to the Adjuntas district. The figures for the month of August in 1897, 1898, 1899, and 1900 are, respectively, 41, 63, 93, 308, and are positively startling. Of the 308 deaths in August, 1900, 150 were due to anæmia and 99 to dysenteric diseases, the rest of the amount being made up of cases of no special significance. Now, such a death list is evidently due to causes that have been acting during a long period, but which have been suddenly intensified by circumstances of recent date, and of these the hurricane of 1899 is the chief active agent. Few cases of actual loss of life from starvation have been reported, but there has been during the past year a chronic condition of insufficient nutrition which has predisposed the people to various maladies. Much of the anæmia which annually slaughters thousands of the natives of Porto Rico is due to the presence of a parasitic worm, *Anchylostomum duodenale* in immense numbers in the intestines, and this parasite, like those so common in the United States and other countries, requires for a suitable soil an unhealthy and weakened system in the patient. Practically the entire food supply was destroyed by the hurricane, and although public food supplies were lavishly furnished, a vast deal of unripe and otherwise unhealthy fruit was consumed by the people, especially the young, this, of course, producing various forms of gastric and intestinal trouble, which in their turn brought on a condition favorable for the development of the parasitic worm. This parasite is easily distributed through the medium of the soil or of drinking water, and the universal carelessness of the natives as to all personal cleanliness tends to the rapid spread of the pest. The board has been unable to ascertain the proportion of cases of anæmia that is due to this cause, but the evidence points to the conclusion that it is very large, and the mortality from this form of anæmia will continue to be great until the progress of education, and especially of sanitation, leads to a greater regard for cleanliness and decency in personal habits. It is comparatively easy to cure an individual case of parasitic anæmia, but just so soon as the patient is replaced in his former environment the disease will surely return. The fatal scourge of dysentery and allied diseases will also continue to kill off the people for a long time to come, for the question of drinking water is one but little regarded, even in cities, and in the rural districts absolutely no attention is paid to it. Streams are used for drinking water that are fouled by every sort of animal and vegetable filth, and the cisterns for rain water are frequently left for many years without being cleansed. All these things can be rectified but slowly, and the superior board of health feels that for years to come its work must be mainly educational, in the true sense of the word. But in order to do this great and imperatively needed work it must be backed up by the moral and material support which only the legislature and executive can give. With adequate means at its disposal the board will be able to carry out measures that will mean the annual saving of hundreds of lives, and, apart from all humanitarian reasons, the needful support should be given because the money value of these lives, now literally thrown away, would be far greater than any amount of money which the board would require or demand. At present the board is so hampered by want of funds that much of the work most pressingly called for can not be undertaken, and it is earnestly hoped that the authorities may be induced to recognize the necessity of furnishing ample means to enable the board to fight conditions such as no board of health in the United States has had to meet.

Regarding your request for statistics, I herewith transmit consolidated reports of vital statistics for the months of May, June, July, and August, and these are worthy of careful study. The number of deaths can be absolutely relied on, but I am not prepared to vouch for the births, and in fact the discrepancy between the rates of births and deaths can only be accounted for by imperfect registration of births. Probably this is due to the fact that childbirth was almost the only thing not taxed under the Spanish régime. These consolidated reports are on a plan framed in the office of the board and are the first reports of the kind ever issued in Porto Rico. They will be sent to the State boards of the United States and to all other bodies which have been in the habit of sending us their reports. It is hoped and believed that in the near future the superior board of health of Porto Rico will hold its own with any board in the completeness and value of its reports of vital statistics, but time and patience will be required to overcome the many difficulties in the way. Many officials are unused to making reports of any kind and it is not always easy to convince them of the importance of such matters, especially as the work is one that entails considerable labor and carries no remuneration.

The question of leprosy in Porto Rico was early brought to the notice of the former board of health, but although various investigations and reports on the subject were made no definite action was taken by it. There was no leper asylum or colony in Porto Rico and the number of lepers was unknown. Widely varying estimates were made and it is even now impossible to get at the exact figures. The medical inspector is now engaged in gathering data for an accurate estimate, and from the figures now at hand it would appear that the number of true lepers does not exceed 100, and is probably much less. The superior board of health has no longer any control of the lepers, having been relieved of this charge in July, 1900. The board of charities is now in charge of the matter, and the lepers, 17 in number, are now housed in temporary quarters at Puerta de Tierra. These quarters are in every way unsuited for the purpose, and I am happy to say that a better order of things will soon prevail. The governor appointed a committee, representing the board of charities, the board of public works, and the superior board of health, to visit Cabras Island, at the entrance to the bay, and report as to its eligibility as a site for the colony. The committee reported that the site was admirably suited for the purpose and the governor approved the report. The board of public works at once entered on the necessary work of fitting and repairs and the colony will probably be ready for occupation on October 1. The island was formerly occupied as the quarantine station and the buildings on it are well built and can readily be adapted to their new use. Accommodation will be provided for 75 inmates, and the situation is such that every possible comfort and convenience will be afforded to the unfortunate patients. For some unknown reason the conditions in Porto Rico do not favor the spread of leprosy, and it is confidently believed that the disease can be totally exterminated in a few years by careful segregation of every case as it is discovered. It is now an accepted fact that leprosy is not an hereditary disease, and this being so, the ultimate extinction of the plague is only a question of time.

The board discussed at its last meeting the question of ice supply of the island, and as complaints have been made as to the quality of that furnished at San Juan, the secretary was instructed to report on the factories in the city and at Bayamon, from which place a large part of the city supply is sent. It was found that the American factory in San Juan was thoroughly equipped with every modern appliance, and that the water, although supplied from the city mains, was most carefully distilled before being frozen, and that every possible test was applied to insure the purity of the product. The ice from the factories of Goyco & Co., in San Juan and Bayamon, was made from water taken from a river which is always turbid and can never be a safe source of supply. The factories at Ponce and Mayaguez have not yet been investigated, and it is understood that at Mayaguez the water is distilled. The board decided that in future all ice should be manufactured only from distilled water, and orders were issued to that effect, giving the manufacturers three months' time in which to make the required additions to their plant.

At a meeting of the board on June 18 it was announced that Mr. William H. Elliott had assumed the office of commissioner of the interior, and he then took his seat at the board. The office of president being thus vacated in the person of Dr. Coll y Toste, late acting commissioner of interior, Dr. R. Hernandez was unanimously elected to the position.

At the meeting on August 6 Mr. Brumbaugh, the newly appointed commissioner of education, took his seat as a member of the board.

The board now consists of the following members: Dr. R. Hernandez, president; Mr. William H. Elliott, Mr. M. G. Brumbaugh, Mr. Fidel Guillermety, and Dr. William F. Smith, secretary and treasurer.

In conclusion, allow me to say that in many respects there is a decided change for the better in the general conditions of the island, and that there is a very gratifying degree of interest shown by the local authorities in matters relating to public health.

Respectfully submitted.

R. HERNANDEZ, M. D.,
President Superior Board of Health of Porto Rico.

Hon. WILLIAM H. ELLIOTT,
Commissioner of Interior.

[EXHIBIT D.]

REPORT OF BOARD OF CHARITIES, PORTO RICO.

OFFICE OF BOARD OF CHARITIES OF PORTO RICO,
San Juan, P. R., September 8, 1900.

SIR: In compliance with your favor ot August 30, I have the honor to submit a report of the board of charities of Porto Rico from May 1, 1900, to August 31, 1900.

Paragraph "g" of General Orders, No. 102, issued April 30, 1900, by the commanding general of the Department of Porto Rico, appointed a board of charities to succeed the board of the military government, consisting of the following members: Mr. Francis Dumaresq, the Assistant Commissioner of Education, Rev. J. de J. Nin, Mr. Andres Crosas, Dr. Jose Marxauch Echevarria, and Mr. B. H. Osterhoudt, secretary and treasurer.

On May 9, 1900, this board was invited to be present at the final meeting of the military board, and after its adjournment held the first meeting of the new board for organization. Mr. Dumaresq was absent in the United States and the assistant commissioner of education had not as yet been appointed. All other members being present, the meeting was called to order by the secretary, and Mr. Andres Crosas was unanimously elected president and proceeded to appoint committees as follows:

Executive committee.—The President, Mr. Dumaresq, and the Secretary.

Committee on insane and leper asylums.—Dr. Marxauch.

Committee on Boys' Charity School.—The Assistant Commissioner of Education and Rev. J. de J. Nin.

Committee on Girls' Charity School.—Mr. Dumaresq and Rev. J. de J. Nin.

It was voted to ask the ladies' visiting committee, appointed under the military board and consisting of Mrs. George W. Davis, Mrs. Jose Lugo Viña, and Mrs. Modesta Gambaro de Quiñones, to continue to serve in that capacity, and they subsequently kindly consented to act.

On May 10, 1900, Mr. Manuel C. Roman was appointed by the governor as an honorary member of the board in an advisory capacity.

CHARITY SCHOOLS.

At subsequent meetings the question of the urgent necessity for improvement and repairs in the sanitary condition of the institutions under the control of this board was discussed, and it was decided to send the following letter to the governor on the subject:

SAN JUAN, P. R., *June 27, 1900*.

SIR: I have the honor to call your attention to the very unsanitary condition of the plumbing left over from the Spanish régime at both the boys' and girls' charity schools at Santurce, and earnestly request that the bureau of public works be instructed to submit estimate of the cost of the much needed changes and authorized to make same.

Very respectfully,

ANDRES CROSAS,
President Board of Charities of Porto Rico.

The GOVERNOR OF PORTO RICO.
(Through the Commissioner of Interior.)

After thorough inspection by the bureau of public works, it was found that very extensive alterations were needed, such as new water-closets, baths, laundry plant, lavatories, and, in fact, an entire change in sewerage. The primitive affairs devoted to these purposes were in wretched condition and a menace to health and decency. It was estimated that these changes necessitated an expenditure of $2,276 at the girls' school and $2,872 at the boys' school. This expenditure was approved by the governor and work began at once. The matter is under way at the present time, and upon completion will place the two buildings in excellent shape for the purpose used for, and is a long step in the direction of making these schools model institutions. When these schools were moved to Santurce it was proposed to place them on a semimilitary basis, and a competent enlisted man from the Army was detailed to supervise the military instruction at the boys' school. A uniform for both boys and girls was designed and the material purchased. The uniforms for the boys were cut by the tailor in charge of that department at the boys' school, with the assistance of the inmates, and sewn at the Woman's Aid Society. This uniform makes a good appearance, is very serviceable, and costs complete—blouse, trousers, cap, belt, and shirt—about $1 each. To make the event memorable as well as the date, the boys were first put in uniform on July 4, 1900, a military drill given, at which were present the members of the board, the honorable commissioner of interior, and several others, who expressed approval at what had been accomplished. The girls' uniforms, also sewn at the Woman's Aid Society, were not completed till later, but on the 9th of August, 1900, similar exercises were held at this school with satisfactory results. It has been shown that this military training and uniformity has added greatly to the disciplinary government as well as to the appearance of these inmates. The scholastic departments were found to be in an almost chaotic condition, and the only solution seemed to be complete reorganization. It was decided at a meeting of the board held on July 2, 1900, to close the schools for one month, dismiss the teachers, engage new ones, purchase new books, material, etc., and start afresh under new direction. This has all been accomplished. It was found necessary, however, to postpone the beginning of the new term to September 3, 1900, to allow sufficient time to get in shape, or nearly so, to start a new régime, from which much is to be hoped for and can be expected.

The trade schools connected with the Boys' Charity School, consisting of tailor shop, shoe shop, and carpenter shop, are doing good work, but need extended facilities. The boys are now sewing as well as cutting out their own uniforms, repairing their own as well as the girls' shoes, and making all minor repairs and carpenter work about both institutions. Much can be accomplished in this direction which will be of inestimable benefit to the boys. The girls are being taught plain sewing, embroidery, etc., and will shortly make all their own clothes. It is hoped to be able to teach them practical housekeeping as soon as possible and fit them for domestic service.

INSANE ASYLUM.

This institution is in comparatively good condition, but occupied to its full capacity. By building twelve cells and making other slight alterations, the work on which is nearly completed, in that part of the Beneficencia building formerly occupied by the orphan girls now at Santurce, room will be made therein for the insane women, greatly adding to the facilities of the institution. This change is expected to be made very shortly.

LEPER COLONY.

At a meeting held on June 7, 1900, the president was requested to consult with the governor regarding the founding of a leper colony, and for which purpose $20,000 had been asked for and subsequently granted in the budget. On August 6, 1900, the board decided to formally ask the governor to select for this purpose the "Isla de Cabras," which place had the unanimous approval of the board as a most suitable location—an island conveniently near but thoroughly isolated.

The following letter was sent:

AUGUST 8, 1900.

SIR: I have the honor to inform you that at a meeting of the board of charities of Porto Rico, held on the 6th instant, it was decided that in the opinion of the board the "Isla de Cabras," or "Goat Island," at the entrance of the harbor was the most suitable place to establish the leper hospital, particularly as it now has valuable buildings going to decay from nonuse and which could be used for that purpose. It was also the desire of the board that the governor be requested to appoint a commission of two to meet two members of the board as a committee of investigation, and who will report to the governor the result of their investigation. I hereby submit this plan for your approval.

Very respectfully,

ANDRES CROSAS,
President Board of Charities of Porto Rico.

The GOVERNOR OF PORTO RICO.
(Through the Commissioner of Interior.)

In reply to this letter the governor appointed Dr. William Fawcett Smith, secretary of the superior board of health, and Mr. Charles B. Post, of the bureau of public works, as a committee to investigate and report. On August 14, 1900, this commission, accompanied by Mr. Andres Crosas, president, visited the "Isla de Cabras," and reported favorably in every way. Mr. Post estimated that to put the building in repair and build a new dock would cost $2,869. The governor approved of the selection of this island and work was commenced shortly and is now being carried on as rapidly as possible, and it is expected will be ready for occupancy by October 1, 1900, with immediate accommodation for 75 inmates, about the number the superior board of health reports at large upon the Island of Porto Rico. The board congratulates itself upon the final settlement of an important problem.

The following is the report of the secretary and treasurer, showing the statistics of inmates and finances for the period requested and his explanation of same:

OFFICE BOARD OF CHARITIES OF PORTO RICO,
San Juan, P. R., September 8, 1900.

SIR: I have the honor to submit herewith a detailed statistical report of the institutions under the control of the board of charities of Porto Rico for the period from April 1 to August 31, inclusive, 1900. This covers a period that is far from normal in many ways, and represents a high-water mark in expenditure per capita and an abnormal condition of admissions and discharges, for the following reasons:

Admissions and discharges.—During the last three months of the fiscal year ending June 30, 1900, admissions practically ceased, owing to the exhaustion of funds appropriated for the purpose of maintenance. Beginning the new fiscal year, July 1, 1900, when provision had been made for the maintenance of 300 boys and 200 girls at the charity schools, notice was sent to each of the municipal boards of charities informing them of the number already admitted from their territory and the number of vacancies that existed, each municipality having allotted a number in proportion to its number of inhabitants, instructing them to carefully recommend the most worthy and forward all applications to this office. Orders of admittance, after due investigation, for 97 boys and 43 girls were signed, and in July and August it will be noticed that 49 boys and 23 girls were admitted. It is expected that the allotment will be complete by October 1, 1900.

Subsistence.—The large increase in expenditure for the month of June is accounted for in two ways: First, to the increase in price of commodities, owing to the anticipated change in currency from Porto Rican to a United States basis, and, secondly, in our anticipation of a still further advance (which did take place), we bought beyond our needs in June for July consumption, thereby showing a material decrease in expenditure for subsistence in July. August, with its increase of number of inmates, shows about a normal basis of expenditure.

Clothing, bedding, and shoes.—Here also June shows an abnormal expense. An unexpended balance of about $1,000, and appropriated for other purposes, was transferred with permission of the governor to this account, and a complete outfit of clothing (uniforms) and shoes for the schools and of bedding and shoes for the insane was purchased with this money. A still further purchase of this material, including a new outfit of clothes for lepers, was made in August, and now the inmates of all the institutions are fully equipped with new clothing, and the expense will be small for some time to come.

Death rate at insane asylum.—The large death rate at the insane asylum is accounted for by the admission of a large number of patients in an enfeebled and dying condition, resultant from the many ills occasioned by the hurricane. Still the number of cured is proportionally and satisfactorily high, and the average shows good results in that institution.

Cost per capita.—The cost per capita for the foregoing reasons is high in comparison to the cost per capita for the whole fiscal year. The average cost per day for the period beginning with the organization of the board of charities of Porto Rico on August 8, 1899, to the end of the fiscal year, June 30, 1900, was 28.5 cents, as compared to 31.4 cents for the period covered by this report.

Even the highest is a low average compared with the expense of similar institutions in the United States from statistics we have on hand. Would call your attention to the fact that this average is derived from figures showing gross expenditure including office salaries and expenses and minor repairs.

Very respectfully,

B. H. Osterhoudt,
Secretary and Treasurer.

The President Board of Charities of Porto Rico, *San Juan, P. R.*

The above report meets with the approval of the board. Much has been accomplished with the funds at our disposal and much more can be accomplished at a comparatively slight increase of expense.

Very respectfully.

Andrés Crósas,
President Board of Charities of Porto Rico.

Hon. W. H. Elliott,
Commissioner of Interior.

Statement of admissions, discharges, deaths, and expenses in detail by months during the period from April 1, 1900, to August 31, 1900.

Institutions.	Date.	Average number of inmates.	Average number of personnel.	Admissions.	Discharges.	Deaths.
Boys' charity school	April	185	43	1	34	1
	May	168	44	2	5	
	June	166	44	1	3	
	July	168	44	6	1	1
	August	187	45	43	7	
Total		175	44	53	50	2
Girls' charity school	April	161	18		3	1
	May	159	18		4	
	June	152	18		12	
	July	147	19	7	5	
	August	154	19	16	1	
Total		155	18	23	25	1
Insane asylum	April	155	33	5	1	7
	May	152	34	3	1	5
	June	150	33	8	4	3
	July	149	33	4	4	3
	August	145	33	3	3	4
Total		150	33	23	13	22
Leper asylum	April	18	3			
	May	17	3		1	
	June	17	3			
	July	17	3			
	August	17	4			
Total		17	3		1	
Office of the board	April		5			
	May		6			
	June		6			
	July		6			
	August		6			
Total			6			
Grand total		497	104	99	89	25

Statement of admissions, discharges, deaths, and expenses, etc.—Continued.

Institutions.	Date.	Expenses.								
		Subsistence.	Clothing, bedding, and shoes.	Furniture and utensils.	Medicines, dressings, and instruments.	Lights and fuel.	Office supplies and incidental expenses.	Salaries.	Minor repairs to buildings.	Total per month.
Boy's charity school.	April...	$625.87	$83.62	$87.46	....	$87.40	$96.42	$995.45	$95.33	$2,071.55
	May....	745.00	15.60	126.99	$66.65	36.17	21.69	1,023.52	93.10	2,128.72
	June....	905.68	475.52	36.50	10.73	52.02	79.06	1,003.02	9.89	2,572.42
	July....	524.15	92.00	91.52	14.54	63.27	32.22	998.53	10.00	1,826.23
	August.	624.65	190.26	99.00	4.15	60.75	114.47	992.10	90.69	2,176.07
Total....	....	3,425.35	857.00	441.47	96.07	299.61	343.86	5,012.62	299.01	10,774.99
Girl's charity school.	April...	386.01	....	227.64	....	22.42	9.60	367.00	....	1,012.67
	May....	527.99	....	67.05	26.60	11.10	24.79	373.67	....	1,031.20
	June....	581.51	353.19	9.61	18.12	12.70	34.56	318.66	....	1,328.35
	July....	370.51	7.99	67.94	....	21.83	23.60	369.45	17.00	878.38
	August.	485.91	291.48	45.33	4.70	21.75	38.61	338.26	....	1,226.04
Total....	....	2,351.99	652.66	417.57	49.42	89.80	131.16	1,767.04	17.00	5,476.64
Insane asylum.	April...	731.96	....	15.60	17.75	30.01	33.90	786.77	23.25	1,639.24
	May....	829.15	....	8.85	38.90	31.24	89.55	792.62	1.20	1,791.51
	June....	1,009.32	165.53	74.49	67.30	18.64	88.93	759.15	....	2,183.36
	July....	746.38	6.00	115.70	22.99	59.25	55.60	723.27	....	1,729.19
	August.	782.80	192.92	....	14.74	50.65	61.73	746.09	142.12	1,991.05
Total....	....	4,099.61	364.45	214.64	161.68	189.79	329.71	3,807.90	166.57	9,334.35
Leper asylum.	April...	114.16	....	.64	1.80	8.06	....	64.00	....	188.66
	May....	108.72	19.68	14.72	11.14	8.19	17.24	55.00	....	234.69
	June....	114.92	....	.66	10.01	7.05	3.41	55.00	....	191.05
	July....	98.71	47.28	2.40	....	16.98	2.22	55.60	....	223.19
	August.	78.13	74.04	12.00	44.85	7.70	2.19	62.40	....	281.31
Total....	....	514.64	141.00	30.42	67.80	47.98	25.06	292.00	....	1,118.90
Office of the board.	April...	....	....	....	....	....	17.09	655.17	....	672.26
	May....	....	....	....	....	....	63.05	402.50	....	465.55
	June....	....	....	....	....	....	20.63	440.00	....	460.63
	July....	....	....	....	....	....	27.72	460.74	....	488.46
	August.	....	....	....	....	....	31.25	469.14	....	500.69
Total....	....	....	....	....	....	....	159.74	2,427.55	....	2,587.59
Grand total...	....	10,391.59	2,015.11	1,104.10	374.97	627.18	989.53	13,307.11	482.00	29,292.47

Cost per capita per day for subsistence.

Boys' charity school	$0.102
Girls' charity school	.088
Insane asylum	.146
Leper asylum	.177
Average	.128

Total cost per capita per day, including the expenses of the office of the board and minor repairs to buildings.

Boys' charity school	$0.324
Girls' charity school	.21
Insane asylum	.336
Leper asylum	.386
Average	.314

[EXHIBIT E.]

REPORT OF DEPUTY COMMISSIONER OF INTERIOR.

DEPARTMENT OF THE INTERIOR OF PORTO RICO,
BUREAU OF AGRICULTURE AND MINES,
San Juan, P. R., September 15, 1900.

Hon. W. H. ELLIOTT,
Commissioner of the Interior:

I have the honor to submit herewith a general statement of the condition and operation of this Bureau, together with two statistical statements concerning cultivated lands and mining claims granted in Porto Rico, as directed by your letter dated August 30, 1900.

Very respectfully,

JUAN STA RODRIGUEZ,
Deputy Commissioner of the Interior.

GENERAL STATEMENT OF THE CONDITION AND OPERATION OF THE BUREAU OF AGRICULTURE AND MINES, WITH SOME STATISTICS CONCERNING THE SAME.

SAN JUAN, *September 15, 1900.*

The duties of the bureau of agriculture and mines, as established by General Order No. 116, August 12, 1899, are:

(*a*) Collection of facts and statistics respecting the cultivation of the soil and disposal of its products.

(*b*) Model farming establishments for experiment with and test of the value of new shrubs, plants, fruits, grains, and domestic animals.

(*c*) Mines and mining.

As no appropriation was made, neither in the budget of the fiscal year 1899–1900, nor in the one of 1900–1901, for the establishment and operation of experiment stations, the action of the bureau has been confined to the collection of information concerning the agricultural conditions of the land, to carry out the proceedings concerning applications for mining patents, and to other routine business.

At present the employees of the bureau are reduced to two clerks and a typewriter under the control of the deputy commissioner of the interior, who is charged with the duties of chief of the bureau.

The information concerning agriculture is collected through the alcaldes of the municipal districts and other persons, who occasionally are willing to aid the bureau. It is not always possible to obtain by this means the necessary data, at least without excessive trouble and delay, but the bureau has not any funds available for paying salaries and traveling expenses of a special agent, who could be charged with the duty of collecting such information on the ground.

Notwithstanding the bounty of nature and the fertility of the soil, agriculture is in a backward state in Porto Rico. The principal reasons for this, besides those which relate to the economic and financial conditions of the island, are:

(1) That most of the Porto Rican agriculturists are ignorant of the principles, rules, and methods of general application that govern agricultural practice in advanced countries.

(2) That no investigation has been made of the agricultural problems and questions that depend on the local conditions of the land, such, for instance, as plants and methods of cultivation most profitably adapted to each kind of soil, most convenient rotations, improvement of native domestic animals, etc.

(3) That even the knowing agriculturist has no facilities for obtaining reliable information about chemical composition of soils, fertilizers, and agricultural products, and about other points of capital importance in the practice of improved agriculture.

As the development of the wealth of the island depends entirely on agriculture, I think the action of the Government should tend to the improvement of these conditions, without sparing any necessary expenditure to attain the purpose.

The Spanish Government had recognized the necessity of favoring the development of improved methods of cultivation and of raising domestic animals. The introduction of agricultural instruction in public schools was tried, and a class of agriculture was comprised in the course of studies of the Provincial Institute of Secondary Instruction. In the year 1889 two agronomical stations—one near Rio Piedras, the other in Mayaguez—were established.

The results obtained were very poor. In the primary public schools agricultural instruction was often neglected by the teachers, and when some attention was devoted to the matter it was not in a useful way. The same occurred in the Provincial Institute, where the class of agriculture was intrusted to a physician who did not seem to be very learned either in theoretical or in practical agriculture. The agronomical stations were not properly fitted for the work they had to perform, and their operation was conducted with great neglect by the Spanish agronomical engineers in charge of their management. During the eight years they were in operation, so little useful work was accomplished that they were considered as a useless charge for the insular treasury, and were discontinued in the month of July, 1897.

Under the present government of Porto Rico measures of that kind, applied according to the American methods that have proved so successful in the United States, would certainly lead in a short time to the improvement of agricultural practice in this island.

For spreading agricultural knowledge the instruction in rudiments of agriculture should be introduced in the primary public schools, classes on the same subject should be comprised in the courses of model and normal schools, and special agricultural education could be established in connection with the experiment stations. Besides, for instruction of the actual agriculturists, the delivering of lectures periodically in the different towns of the island, and the publication of same in a periodical paper that could be issued by the bureau of agriculture, to be distributed among agriculturists, would be very useful.

The introduction into the country of new plants and domestic animals is of great importance for the development of agriculture, but the work of experiment stations to be established should not be confined to investigation and tests concerning that question. To satisfy the wants of Porto Rican agriculture I have pointed above, it is also of capital importance that experiments and tests should be made with the view of improving as far as possible the methods of cultivation of plants and raising domestic animals now in practice in the island, and of discovering for agriculturists what plants and rotations could be most profitably adapted, under the local conditions, to each kind of soil, in order to obtain the greatest possible income without impairing the fertility of the land. The chemical laboratories of these stations should be well fitted to make analyses of soils, fertilizers, and agricultural products for the use and information of agriculturists.

It would be a great benefit to Porto Rico if the United States Department of Agriculture would extend its action to the island in the same way as it does in the Territories, and give to the agricultural institutions to be established here such support as is given to similar State and Territorial institutions.

The inclosed statement, in which are condensed the information collected by the bureau in regard to the area of different cultures in Porto Rico at the beginning of the fiscal year 1899–1900, shows that their extent in acres was as follows: Cane, 80,034; coffee, 180,289; tobacco, 15,324; miscellaneous, 184,059; total, 459,706.

Under "miscellaneous" are comprised plantains, sweet potatoes, maize, rice, beans, peas, cocoanuts, bananas, and other fruits and vegetables which are almost entirely used for local consumption.

In the year 1896 the area of cultivated lands was stated as follows: Cane, 61,498; coffee, 122,399; tobacco, 4,264; miscellaneous, 109,788; total, 297,949.

It would follow that the area of cultivated land increased from 1896 to 1899 more than 50 per cent. The number of acres corresponding to the increase of each kind or group of cultures would be: Cane, 18,536; coffee, 57,890; tobacco, 11,060; miscellaneous, 74,271. There are, nevertheless, reasons to believe that the real increase is not so great, particularly for coffee and miscellaneous, and that the difference partially comes from incorrectness of the figures given for the year 1896. These figures were taken from the returns for taxation, and are to be considered below the reality. Otherwise the fact could not be explained, as in the year 1898, by reason of the war and the disturbances that took place during some of the following months, the extent of cultivated land did not increase, and the year 1899 no plantation of coffee was made, as the price of this staple had fallen very low. The extraordinary increase referred to should be ascribed only to the year 1897 for coffee, and to years 1897 and 1899 for other cultures.

Notwithstanding, it is certain that the extent of land under cultivation for cane, tobacco, and minor cultures was considerably greater in 1899 than it was in the years preceding American occupation. Unfortunately the hurricane of August 8 destroyed the greatest part of the crops. Coffee harvested after the hurricane amounted to no more than 10 per cent of a normal crop, and the crop of sugar exported during last spring is estimated at 45,000 tons, while after the area of cane plantations in 1899 the total crop was expected to amount to about 80,000 tons, of which 65,000 to 70,000 tons would have been exported and the rest used for local consumption.

The bureau is not yet able to give figures in regard to the extent of different cultures for next crop, but the following indications can be made after the information on hand:

No new plantation of coffee has been made in the present year and by reason of the injuries caused by the hurricane some of the old plantations are entirely lost, others have not been restored from lack of resources on the part of their owners, and the yield of those which have been put in good condition will be little. It is believed, however, that the next crop will reach about one-third of a normal one, or, say, 8,000 tons.

The lands are being prepared for planting tobacco, but as the price of this product is very low, and a good portion of the last crop is still unsold, the culture will be surely of much less extent than last year.

Minor products are planted in the greatest part of the island to an extent equal to that of last year.

The cultivation of sugar cane has been developed to a great extent on account of the favorable condition for sugar exportation existing at present, and as the lands were fertilized by the overflows that occurred after the hurricane of August 8, the crop to be harvested next spring will be far above the average of the last years under Spain.

The mineral resources of the island are very limited.

Gold placers were worked for some years by the Spaniards in the first century after the conquest of the island, and it is reported, after official statistics, that 2,700 pounds of gold were sent to Spain from the year 1509 to 1536. It is believed that this figure represents only the part of the Crown of Spain; that is to say, the fifth of the total production during that period. No statement is found about extraction of gold in the subsequent years, and it is assumed that the deposits were almost exhausted by the middle of the sixteenth century.

At present this precious metal is found in little quantities in the beds of some rivers, particularly in the rivers Mameyes, Prieto, Sabana, Fajardo, Gurabo, Espiritu Santo, and Rio Grande, having their sources on Sierra de Luquillo, the most elevated hills of the island, situate west of Fajardo, and in the rivers Corozal, Negros, Congos, Cibuco, and Mabilla in the municipal district of Corozal. It is believed that some valuable loads of auriferous quartz, from which the gold carried by those rivers would come, is to be found in the mountains bordering their beds but as yet no careful investigation has been made. Although the auriferous sands are very poor, they are being at present a great resource for the relief of laborers in some parts of the country, particularly in the district of Corozal I have just mentioned, where it is reported that some four hundred families are working in extracting gold, which affords each person some 20 or 30 cents a day.

Some deposits of iron ore have been discovered in the eastern part of the island, and though no proper investigation has been made to ascertain the amount of ore that could be extracted from them, the fact that the mineral is found in abundance at the surface of the land all over the municipal districts of Juncos, Las Piedras, Humacao, Gurabo, and Guayama, together with the result of preliminary investigations made by Mr. Santisteban in two mining claims of his property in which the existence of at least 4,000,000 of tons of ore have been ascertained, lead to the conclusion that valuable lode are to be found under ground and that their exploitation may be the object of a new industry for the island.

The salinas existing on the coasts on the island, if worked in the proper way, would yield all the salt necessary for local consumption and a good amount could be exported. But generally they are worked in very poor conditions, and from the year 1892 some hundred of tons have been imported annually into Porto Rico.

I inclose a statement of the mining claims granted by the Government of Porto Rico up to this date. Aside some salt works, not any of those claims is actually worked. and I think that the mineral deposits, other than those of iron ore comprised in those claims, are of little value. It is believed that some of the iron deposits will be worked by an American company which is making arrangement with the owners.

JUAN BTA. RODRIGUEZ,
Deputy Commissioner of the Interior.

Mining claims granted in Porto Rico up to September 15, 1900.

Name of grantee.	Name of claim.	Location.		Area of claim.	Kind of mineral.	Date of concession.	Annual rent.
		Town.	Barrio.				
				Hectares.			
J. Comas y A. Colberg	La Candelaria	Cabo Rojo	Pedernales	105	Salt	Jan. 10, 1884	$84.00
A. Fernandez Laza	Perseverancia	Naguabo	Rio Blanco	12	Copper carbonate	Apr. 9, 1881	36.00
Manuel Ugalde	La Esperanza	do	do	12	do	Oct. 30, 1882	36.00
Ulises Lopez	Fortuna	Lajas		109.06	Salt	Apr. 9, 1884	87.26
Saurí, Subirá y Ca	Perseverancia	Ponce		90	do	Apr. 14, 1890	72.00
Alberto del Toro	Caborrojeña	Cabo Rojo	Boqueron	380.09	do	Apr. 5, 1890	304.08
Eugenio Guenard	Carmelita	Yauco	Guanica	.94	do	June 23, 1890	.75
Miguel Planellas	La Estrella	Guayama	Carmen	12	Lead	Dec. 9, 1891	36.00
Carlos Bernstein	Catinesterlila	Luquillo	Mameyes	12	Auriferous sand	July 8, 1891	36.00
Arturo Aponte	Rosita	Guayama	Carmen	12	Galena	Dec. 9, 1891	36.00
Quevedo y Hess	La Monserrate	Luquillo	Manuyes 1°	12	Auriferous sand	Nov. 30, 1892	36.00
Alfredo Collado	El Rosario	San German	Rosario	12	Phosphate of lime	Apr. 13, 1893	36.00
Do	Fortuna	Cabo Rojo	Monte Grande	6	do	do	18.00
Do	Buena Vista	do	Llanos Tuna	6	do	June 9, 1894	18.00
Do	Bracero	San German	do	6	do	June 6, 1894	18.00
Do	Ceiba y Cuevas	Lajas	Lajas Arriba	12	do	June 4, 1894	36.00
A. A. Colberg	Moja Casabe	Cabo Rojo	Boqueron	3.87	Salt	May 5, 1894	3.09
Joaquín Alarcón	La Asturina	Isabela	Arenales Bajos	6	Phosphate of lime	Apr. 27, 1894	18.00
Miguel Arzuaga	La Confianza	Manati	Las Boquillas	6	do	Feb. 22, 1895	5.76
P. Santisteban	La Esperanza	Juncos	La Ceiba	96	Iron	Nov. 12, 1896	92.16
Joaquín Alarcón	Trabajo	Isabela	Arenales Bajos	12	Phosphate of lime	Jan. 18, 1897	11.52
J. Sanchez Valdés	San José	Ponce		12	do	Feb. 15, 1897	11.52
Argueso y Miner	Ernestita	Naguabo	Rio Blanco	100	Silver and nickel	Apr. 14, 1899	240.00
Do	Santa Amalia	do	do	100	Copper sulphate	do	240.00
Hogan y Piarce	Reina del Cobre	Corozal	Dos Bocas	12	Copper and silver	May 9, 1899	28.80
J. R. Látimer	Unión	Rio Grande	Mameyes 1°	5	Auriferous alluvia	Apr. 25, 1899	4.80
José Santisteban	Eloisa	Piedras	Collores	25	Iron	do	24.00
Argueso y Miner	María	Humacao	Mariana	8	Iron and other metals	May 9, 1899	19.20
Pedro Santisteban	La Fe	Juncos	Ceiba Norte	14	Sesquioxide of iron	June 9, 1899	18.44
Do	La Carranzana	do	Collores	20	Iron	May 27, 1899	19.20
Do	Caridad	Gurabo	Mamey	21	Oxide of iron	do	20.16
José Santisteban	Polonia	Piedras	Boqueron	40	Iron	do	38.40
Pedro Santisteban	San Miguel	do	Collores	21	do	do	20.16
Do	San Antón	Humacao	do	12	do	do	11.52
Do	Santa Agueda	Lajas	Lajas Arriba	15	Copper and other metals	Sept. 4, 1900	36.00
Do	Elena y Eugenia	do	do	15	do	do	36.00
Do	Caprón	do	do	15	do	do	36.00
Do	Begoña	Piedras	Collores	21	Iron	do	20.16
Do	Luisa	do	do	13	do	do	12.48
Do	Buen Suceso	Gurabo	Mamey	71	do	do	68.16

Acreage of cultivated and uncultivated lands in the municipal districts of Porto Rico, fiscal year 1899–1900.

Municipal districts.	Lands planted with—				Pasturages.	Woodland.	Bushy lands.	Total.
	Sugar cane.	Coffee.	Tobacco.	Miscellaneous.				
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Bayamon	536	967	114	2,892	43,742	8,357	....	56,608
Toa Baja	445	6	29	152	10,190	51	3,283	14,156
Dorado	318	196	61	227	9,614	2,823	....	13,239
Vega Alta	974	288	146	1,699	7,086	5,036	....	15,229
Vega Baja	1,628	160	142	1,120	23,251	823	....	27,124
Corozal	59	1,275	49	3,566	18,425	162	2,593	26,129
Toa Alta	84	150	149	950	12,613	1,180	....	15,126
Naranjito	1	264	946	1,723	11,095	2,457	....	16,486
Rio Piedras	376	647	26	1,285	24,338	50	2,967	29,689
Trujillo Alto	20	64	3	1,002	12,131	494	....	13,714
Carolina	2,400	144	5	992	23,472	1,141	....	28,154
Loiza	2,299	864	28	2,302	19,806	1,163	885	27,347
Rio Grande	1,344	808	....	1,551	24,958	8,538	....	37,199
Arecibo	4,640	3,106	379	4,129	35,052	24,150	....	71,456
Hatillo	148	743	447	1,950	16,574	6,301	....	26,163
Camuy	763	1,619	1,039	3,629	14,801	1,785	....	23,636
Quebradillas	96	331	192	947	4,956	350	4,614	11,486
Utuado	182	18,411	161	8,436	23,691	44,152	....	95,033
Ciales	62	9,534	35	5,234	10,749	11,509	....	37,123
Morovis	78	1,972	76	1,726	15,241	4	172	19,269
Manati	1,318	512	255	1,145	14,843	6,988	....	25,061
Barceloneta	712	1,946	207	1,431	7,468	9,030	....	20,794
Aguadilla	418	119	187	6,335	11,220	3,941	....	22,220
Aguada	816	885	8	4,281	11,390	1,014	....	18,394
San Sebastian	174	6,645	....	5,987	27,643	3,504	....	43,953
Lares	27	11,509	1	4,713	15,131	3,324	2,589	37,294
Isabela	389	528	651	4,160	17,034	2,501	....	25,263
Rincon	553	58	2	2,574	5,016	34	....	8,237
Moca	229	1,997	....	1,752	15,861	4,360	....	24,199
Mayaguez	2,552	8,790	66	3,674	20,086	4,335	....	39,503
Hormigueros	812	123	....	417	3,997	639	....	5,988
Cabo Rojo	2,246	174	55	5,523	24,233	8,855	....	41,086
Lajas	1,758	206	99	6,681	24,001	3,699	....	36,444
San German	2,564	2,485	509	5,297	18,157	1,832	....	30,844
Sabana Grande	159	320	423	4,626	14,874	798	....	21,200
Maricao	15	13,943	....	232	5,606	2,088	....	21,884
Las Marias	16	14,471	14	1,765	8,036	6,154	....	30,456
Anasco	3,128	4,387	....	1,628	13,712	951	....	23,806
Ponce	7,377	8,293	230	6,001	29,800	12,633	....	64,334
Penuelas	737	2,847	86	4,825	13,991	3,940	....	26,426
Guayanilla	1,303	3,199	210	4,928	10,501	6,544	....	26,685
Yauco	2,045	6,729	736	10,942	28,216	15,023	....	63,691
Adjuntas	16	8,886	....	3,926	8,893	19,043	....	40,764
Juana Dias	5,304	5,521	167	4,515	41,743	3,565	....	60,815
Santa Isabel	1,696	....	188	207	15,397	3,727	....	21,215
Coamo	210	3,282	199	3,155	34,599	3,628	....	45,073
Aibonito	....	3,663	598	2,005	11,889	2,561	....	20,716
Barranquitas	4	1,470	189	2,584	15,363	2,453	....	22,063
Barros	1	4,905	5	5,238	19,249	8,124	3,963	41,485
Guayama	2,938	1,830	5	1,134	30,417	3,945	....	40,269
Salinas	1,003	233	421	820	29,536	11,590	....	43,603
Cayey	2	4,928	314	2,615	19,855	3,159	....	30,873
Sabana del Palmar	76	2,803	2,120	3,153	9,013	1,572	....	18,737
Cidra	40	1,789	1,005	2,360	15,549	511	....	21,254
Aguas Buenas	12	2,882	194	1,885	12,829	1,478	....	19,280
Caguas	799	552	568	864	31,337	1,374	....	35,494
Gurabo	890	494	218	792	14,371	767	....	17,532
Juncos	1,597	267	432	1,208	12,574	560	....	16,638
Hato Grande	334	1,379	525	2,742	21,065	6,984	....	33,029
Arroyo	892	452	....	801	7,146	780	....	9,571
Humacao	1,832	6	46	910	22,855	1,032	1,170	27,851
Naguabo	1,015	181	....	912	21,958	2,197	....	26,213
Fajardo	4,441	390	136	1,215	21,275	5,945	....	33,402
Piedras	233	140	44	1,251	16,268	....	437	18,373
Yabucoa	3,167	235	22	2,190	25,008	1,033	....	31,655
Maunabo	1,912	424	67	1,202	7,943	1,450	....	12,998
Patillas	1,973	1,912	95	2,046	17,736	4,293	....	28,055
Vieques	3,846	....	....	400	20,124	4,413	2,986	31,769
Total	80,034	180,289	15,324	104,059	1,206,598	318,897	25,659	2,010,855

N.

N.
Loiza
Carolina
Piedras ROAD
Rio-Grande
N° 7
Trujillo-alto
RIO LOIZA
Gurabo
Juncos
Aguas Buenas ROAD N. 5
Hum
Caguas
Las Pied
San Lorenzo
RIO GUA
Yabuc
Maunab
Patillas
R
Arroyo
yama
PUNTA FIGURAS.

REPORT

OF THE

COMMISSIONER OF EDUCATION FOR PORTO RICO.

LETTER OF INSTRUCTIONS.

Department of the Interior,
Washington, July 7, 1900.

Sir: I have the honor to invite your attention to section 25 of the act of Congress, approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," which provides as follows:

> That the commissioner of education shall superintend public instruction throughout Porto Rico, and all disbursements on account thereof must be approved by him; and he shall perform such other duties as may be prescribed by law, and make such reports through the governor as may be required by the Commissioner of Education of the United States, which shall annually be transmitted to Congress.

I have to request that you will cause this matter to be brought to the attention of the commissioner of education, with request that he will prepare and forward through you for my consideration, at a date not later than October 1, 1900, a report of the educational matters pertaining to Porto Rico with which he is charged under existing laws.

In addition to such matters as may be embodied by the commissioner of education in his report, it is desirable that he incorporate therein answers to the following questions, which correspond to questions annually propounded by the Bureau of Education of this Department to each State and Territorial superintendent of public instruction in the United States, to wit:

1. Number of pupils enrolled on the school register (excluding duplicates or reenrollments):

White—
Males ....
Females ....
Total white ....

Colored—
Males ....
Females ....
Total colored ....

White and colored—
Males ....
Females ....
Total ....

2. Average daily attendance:
   White ....
   Colored ....
      Total ....
3. Average number of days the public schools were kept:
   White ....
   Colored ....
      All ....
4. Number of buildings used as schoolhouses (including buildings rented):
   For white schools ....
   For colored schools ....
      All ....
5. Estimated value of all public school property .... $........
6. Number of pupils enrolled in public high schools or studying high-school branches, i. e., pursuing such studies as algebra, geometry, physics, chemistry, general history, Latin, and modern languages other than English and Spanish (included in answer to question) ....
7. Whole number of different teachers enrolled:
   White—
      Males ....
      Females ....
         Total white ....
   Colored—
      Males ....
      Females ....
         Total colored ....
   White and colored—
      Males ....
      Females ....
         Total ....
8. Average monthly salaries of teachers:
   White—
      Males ....
      Females ....
         Average white ....
   Colored—
      Males ....
      Females ....
         Average colored ....
   White and colored—
      Males ....
      Females ....
         Average of all ....
9. Receipts for the school year (1899–1900):
   From interest of permanent school funds .... $........
   From insular taxes (or appropriations) ....
   From local taxes (or appropriations) ....
   From sale of bonds ....
   From all other sources ....
      Total receipts for public moneys ....

10. Expenditure for the school year (1899-1900):

For sites, buildings (including permanent repairs and alterations) furniture, libraries, and apparatus	....
For salaries of superintendents and teachers	....
Bonded indebtedness paid	....
All other expenses	....
Total expenditure of public school moneys	....

The enumeration of the topics given above is not intended to exclude the presentation of other educational matters which may commend themselves to the commissioner in his report; on the contrary, the fullest information is desired.

It is desirable that the report of the commissioner of education of Porto Rico be submitted to the Department within the time above specified in order that proper consideration may be given to the important subjects therein requiring attention in the annual report of the Secretary of the Interior to the President.

Very respectfully,

E. A. Hitchcock,
Secretary.

The Governor of Porto Rico,
San Juan, Porto Rico.

LETTER OF TRANSMITTAL.

Executive Mansion,
San Juan, P. R., October 15, 1900.

Sir: I have the honor to submit herewith a report on education in Porto Rico, by Hon. M. G. Brumbaugh, commissioner of education.

Very respectfully,

Chas. H. Allen,
Governor.

The Secretary of the Interior,
Washington, D. C.

Department of the Interior,
October 22, 1900.

The accompanying report of the commissioner of education for Porto Rico, submitted to this Department through the governor, pursuant to the requirements of section 25 of an act of Congress approved April 12, 1900, "To temporarily provide revenues and a civil government for Porto Rico, and other purposes," is herewith transmitted to the Commissioner of Education for his consideration.

Inasmuch as it is desired to print this as one of the regular reports to the Secretary of the Interior, it is requested that it be returned at an early day as practicable, together with any recommendations in the premises that he may desire to suggest.

F. L. Campbell,
Assistant Secretary.

Education Office, *October 23, 1900.*

Respectfully returned to the honorable the Secretary of the Interior with the statement that the report of the commissioner of education for Porto Rico has been read and found to be in complete accordance with the spirit and letter of the form prescribed by me for such report as required in section 25 of an act of Congress temporarily to provide revenues and a civil government for Porto Rico and other purposes.

W. T. HARRIS,
Commissioner.

REPORT.

DEPARTMENT OF EDUCATION OF PORTO RICO,
OFFICE OF THE COMMISSIONER,
San Juan, October 15, 1900.

SIR: I have the honor to transmit herewith my first report on education in Porto Rico. I beg to add that beginning May 1, 1900, and continuing until my arrival August 4, 1900, Dr. George G. Groff was first president of the insular board of education and later acting commissioner of education, that he made no report upon the work of education in Porto Rico for this period, and that he left no statement of his administration beyond a brief note of suggestions headed, "A number of matters of pressing importance to which I thought I ought to call your attention that action may not be delayed an unnecessary moment after your arrival." It will be seen that these suggestions refer wholly to matters to be taken up and not at all to the work done in the time named.

On July 1, 1900, fire destroyed the "model and training school," in which the department had its offices. All the records of the office were burned, and hence no definite data for the closing months of the school year are available. You will therefore appreciate the difficulty attending the writing of this report.

I came to San Juan at noon Saturday, August 4, 1900, and took charge of my department Monday morning, August 6, 1900, Dr. Groff sailing the same day for New York. I was unable to obtain from him in this brief time any oral statement of educational conditions in Porto Rico, and was obliged to begin my work without records or guidance.

Respectfully submitted.

M. G. BRUMBAUGH,
Commissioner of Education.

Hon. CHARLES H. ALLEN,
Governor of Porto Rico.

NEW QUARTERS FOR THE DEPARTMENT.

When I entered upon my duties I found the department located in three small rooms in the executive mansion. Through the kindly assistance of Hon. William H. Hunt, secretary of Porto Rico, and Hon. W. H. Elliott, secretary of the interior, rooms were selected for this department in the Intendencia building on Plaza Alfonso XII, and into these rooms the department moved September 1, 1900. The

department now has seven rooms,
proper dispatch of its business. In
one good room is set aside as a p
pedagogical museum. In the same
venient and commodious, are used
ment. Here are received all the b
the schools of the island, and from
equipments for the schools of the i

The departmental organization
a disbursing officer, a secretary, t
shipping clerk, a pension clerk, a
clerk, a messenger, and a janitor.
and the business of the departme
believe, satisfactorily.

SCHOO

The school law promulgated by
not fitted to the conditions. This
written in part by General Eat
months, and who made but one tr
based largely upon the school syst
ing session of the insular legislatu
a new law passed in its stead. Th
for enumeration here. One matte
The law authorizes the granting o
five years. It does not require an
they hold a Spanish or Porto Rican
teachers wholly to local boards.
ated many of these teachers was su
legalized its graduates to teach, u
for five years. Licenses were issu
than there are schools upon the
teaching force is thus taken bodi
with local boards. This is fatal
It is impossible to supervise educ
Congress providing a civil govern
commissioner is absolutely helples
should be a change here that will
teachers to hold a license, and that
competitions and machinations of
pernicious interference of politicia
power, but it is willing to assume
security to worthy teachers and th

Local boards of education are c
are required to pay rent for teac
buildings for school purposes; and
have no power to assess or collec
the mercy of the alcalde and any a
palities. These municipalities ar
appropriation to the local board.
make contracts which by law the
these boards are composed of good

and to cooperate with this department, but they frankly confess their inability to do as they would like, because they have neither power nor resources to do so.

I do not deem it prudent at this time to comment at length upon these legal provisious.

APPORTIONMENT OF SCHOOLS.

In many barrios of large population no schools were opened. When it is remembered that only one in ten of the number of schools needed can be opened with the money at command, we can appreciate the difficulty of assigning the schools upon any equitable basis. After long and careful study of this problem it was decided to make a per capita assignment of schools. By this plan some municipalities were assigned a greatly increased number of schools. Utuado last year had 6 schools. This year it was given 26 schools. Its large population entitled it to this increase. It was asserted that in such cases the increased number would not be provided for by the local board. Such did not prove to be the case. With commendable zeal the Utuado board accepted the proposition, rented the houses, employed the teachers, and opened the schools on time. This in general has been the case. Where the conditions are made perfectly clear and the plan is reasonable, action can be had. The people want schools. The pupils will attend the schools. Last year 616 schools were opened in Porto Rico. This year we shall maintain at least 800 schools, an increase of 30 per cent. This will provide for almost 9,000 additional pupils. That is something. The accompanying schedule will show how these schools are distributed.

ENGLISH SUPERVISORS.

There are by law 16 English supervisors, graduates of colleges or normal schools, and their compensation is fixed at $75 per month throughout the year. These supervisors were at first, by order of General Eaton, the first director of education under military control, teachers of English in the schools. They were, says Dr. Groff, "ex-soldiers, ex-teamsters, ex-packers, and other such men, very largely." They now do no teaching. Their entire time is devoted to supervision. Last year two of these supervisors were also principals of schools at San Juan and at Ponce. I was soon convinced that the work of a supervisor is sufficient to employ his entire time. No supervisor will hereafter be assigned any other service. These officers visit each school in their district once a month. They report directly to the commissioner of education. Of them Dr. Groff says: "The law fixes the number at sixteen. I would have, if I had remained in office, reduced the number to ten the present year. After that we might reduce the number to five or seven." I can not agree to this reduction. There is absolute need for closer supervision than is now given the schools.

It would be a great loss to the system to curtail supervisory functions at this time. The number of schools will annually increase. It is not wise to reduce the number of supervisors. We shall have 16 this year, as the law provides. They are for the most part as good men as the salary can command. Their value to the system is due to their

visits to the schools, their reports
dealing with teachers, citizens, and
of the Government property in use

There is a marked difference in t
itself in the educational sentiment
that the law may be so modified a
duties, pay them a fair salary, and
high qualifications and service.
appointed a number of new ones, a
effective and satisfactory corps of
department to have them meet soo
tical problems with which they ha
is the purpose of the departmen
practicable and to place upon the
time letters of advice and explan
significance are mailed to them th
their work and that they may unde
These letters have been of conside
herewith inserted.

The difficulty attending their w
and languages. The teachers who
wholly willing to accept the new
supervisors as official meddlers.
unfortunate experiences. But in
supervision, and now appreciate i
The best friend a good teacher ca
The best friend of the children an
when he honestly and courageously
teacher. If a teacher drinks rum
in the presence of his pupils, it is
ment has a supervisor who reports
the loss of a position and dismissa
petition the department, but it is o
ment sustain the supervisor and pr
incompetency.

There is a weakness in the present
meet the commissioner. They ma
believed that a field deputy should
problems of moment with the s
address the citizens, and in general
department to the people and officia
know and speak the two language
school man. He must have had w
of good sense and of character.
I have at last located one in Venez
take up this work.

AMERICAN

By military law one teacher of E
lish, must be employed in each cit
There were 67 such positions last
this law I am unable to state; b
beginning October 1, 1900, more

in each case at least one American teacher is employed, and in some cases bright young American teachers have so mastered the Spanish as to secure positions in the higher grades and principalships of the schools. The total number of American teachers now engaged in the schools is above 100, and the demand is for more, provided they know enough Spanish to instruct the children in their native tongue.

These American teachers at the outset were mostly young men who came to Porto Rico with the American army. None of them knew Spanish, and some of them knew little English. Gradually the quality was improved by the addition of groups of teachers, mostly women, from the United States. These the military government carried free to and from San Juan and New York. The same assistance has been generously continued by the Hon. Elihu Root, Secretary of War.

These teachers were selected solely upon application and testimonial, and were not always desirable persons for the work nor typical representatives of the vast army of American teachers, but some of them merit the warmest commendation and the greatest respect. Under circumstances most unusual and conditions most unpropitious they entered upon their labors and did nobly. Living often in a remote village, without a single associate who spoke the English language, they struggled on and accomplished much good.

One group deserves no credit—the seekers after novelty and new experiences, mere adventurers, who imposed upon the administration and the children, and who used the salary and position of teacher solely to see a new country for a year and then return. Fortunately these are gone, and the better teachers remain to carry on a really helpful and arduous task. The people of Porto Rico have patiently borne with these adventurers, and quietly longed for their departure. What the schools need above all else is a trained body of earnest teachers who come to help, and who know what it means to sacrifice for a great cause.

This year, in addition to those who have been reelected, about fifty American teachers have been selected, and they are now entering upon their duties. These have some knowledge of Spanish, they are graduates of leading universities, colleges, and normal schools, have been successful teachers in their respective States, and are for the most part young men and young women of ability and discretion. It is confidently believed that these teachers will do a great service to the schools of Porto Rico.

Under the law these teachers of English are called "kindergarten teachers," and the idea was widely circulated that these teachers from the States should be and were trained kindergartners. The term "primary teacher," was held in reproach, and as a result the people were given a false idea of both kindergartens and of primary schools. As a matter of fact, only a few trained kindergartners came to the island. Teachers of all grades of American schools, young women from normal schools, young men from colleges, with no experience whatever in any kind of teaching, and in some cases young men with no training in any higher institution and with no experience in teaching went into the towns as kindergarten teachers. Some people in Porto Rico were well enough acquainted with educational systems to detect this fraud, and the reaction in places was by local school authorities to declare their opposition to employing kindergartners—i. e., American teachers—for this year. Porto Rico is not yet ready for the

wide introduction of the kindergarten.
tution has a legitimate function, and in th
one is responsible for this unfortunate tra
torically the kindergarten came late.
Education of Man until 1826. The first
Keilhau in 1817. Before this time the s
good, and did it without the kindergart
gogically the kindergarten is the last refi
system of education that proposes the en
the most complex social, industrial, and ci
a socializing institution. It aims to organ
as exhibited in play, into constructive
presupposes other educational agencies an
limitations as to demand a counter influe
altruism. It is an admirable conceptio
the child's well-being; but it represents
wholly out of proportion to the needs of
are thousands of children half-clothed,
homed. They do not know how to read
people around them. At least 80 per ce
ate. The crying and current need is a
appalling illiteracy. To teach children t
to love home and country well enough to
in all domestic, social, and national virtue
discord now prevails is the problem.

Later on the more specialized forms of
taken up. Historically, pedagogically, a
kindergarten idea for Porto Rico is wron

These American teachers know little
no English. The people are anxious to
the language of the United States. They
The curse of illiteracy must be remove
These teachers from the United States n
language of the United States. They mu
ers how to acquire and to impart the E
teachers can teach the Spanish language,
the example and direction of trained profe
of English go to the rural schools. The
and the condition of living preclude then
schools, 50 per cent of the entire numb
taught wholly in Spanish. The normal s
speedily give the teachers of these school
language, that all the children in the sc
both languages. This change can not
but it can be commenced, and in less tim
teachers will be able to accomplish decid
guage will not and should not disappear
sylvania it required generations to put E
the schools. In New Mexico the facts
hindrance, not a help, to deprive these
acquire both languages.

The salary of an American teacher is
far from just or adequate. In cities of
salary is fixed at $40 per month for nine

population, or more, the salary is fixed at $50 per month for nine months. When this law was announced the War Department obligated itself to give these teachers free transportation to and from San Juan and New York. This transportation may now be withdrawn at any time, and yet the law fixing the salary as above is still regarded and followed. Thus the salary of American teachers, which at the outset was wholly inadequate, is threatened with a reduction of $100, the cost of transportation. Anyone at all conversant with American education knows that teachers of good training or successful experience can readily command more than the amount fixed by law for such service here. The result is that we are compelled to employ only the inexperienced, the roving, or the rejected teachers from the States. This is not wholly the case. A few admirable teachers have come that the climate may restore their shattered constitutions, and a few others have come as a solemn and sacred sacrifice for the Americanizing of the people of Porto Rico. These are true patriots and are worthy the highest commendation. The teacher who braves a strange climate and a new environment for the good of those to be served is as much a patriot as he who in time of war carries the starry banner to victory.

There is yet another menace in this limitation. The opening of commercial relations with our new insular dependencies has opened a new avenue for teachers who understand the Spanish language. These teachers remain here only long enough to acquire the language and hasten home to fill important positions in American schools at greatly increased salaries, and the island must take a new group and suffer the consequent results. The teachers who come here and acquire the language should be paid a salary commensurate to their services, and should not be tempted by a larger salary to return to the States. Early legislation upon this matter is of vital importance to the future of the schools of Porto Rico.

The department suffers from another unfortunate condition. The law demands one teacher of English in each graded school, but it does not give the department the power to appoint the teacher. That power is vested in the local boards of education. They may appoint any teacher whom they see fit to select. The department is wholly at the mercy of local control. The commissioner must write to the teachers in the States, guarantee them a fixed salary, secure for them transportation, bring them to San Juan, and then trust to local boards to ratify such choices by election. In the meantime some other American teacher, holding a five years' license from the insular board of education, secures the place, and the department is obliged to seek a vacancy elsewhere. All this causes vexatious delay and great embarrassment in the assignment of teachers. Evidently the power that selects and provides the teacher should also have the power to appoint the teacher. It is but fair to the majority of the local boards to add that in most cases this does not occur, due not to the law in the case, but to the good faith of these officers with the department.

Under the same law these American teachers are to be given living quarters, or an allowance in cash for such quarters, at the expense of the local board. In many cases this has not been done. Contracts were made, but the rent was unpaid, and the teacher was obliged to pay from her salary the rent or leave the rooms. The department has almost daily complaint of unpaid allowances to American teachers, and will continue to have these complaints until teachers are paid in salary a sufficient sum to provide their own living quarters.

TEACHERS' INSTITUTES AND SUMMER SCHOOLS.

During the summer vacation a group of excellent men and women were sent over the island to conduct a series of teachers' institutes. These teachers were busy all the year in the schools of San Juan and were physically in no condition to endure the travel and labor. Two were sick and two others have been obliged to go off to recover their health in time to take up the work in November. These institutes were held at the following times and places:

CONFERENCIAS DE PROFESORES, ESTACIÓN DE 1900.

Tendrán lugar conferencias de maestros durante el verano en los siguientes puntos y en las fechas dadas:

San Juan	Junio 25 y 26.
Caguas	Julio 2 á 6.
Aguadillia	Julio 9 á 13.
Mayaguez	Julio 16 á 20.
San Germán	Julio 23 á 27.
Yauco	Julio 30 á Agosto 3.
Ponce	Agosto 6, 7, y 8.
Coamo	Agosto 9 á 10.
Guayama	Agosto 13 á 17.
Humacao	Agosto 20 á 24.
Fajardo	Agosto 27 á 28.
Rio Piedras	Agosto 30 á 31.
Vega Baja	Septembre 3, 4, y 5.
Camuy	Septembre 6, 7, 8.
Arecibo	Septembre 10 á 14.

Todos los maestros que no esten en la actualidad desempeñando una escuela deberan asistir á estas reuniones, y los que asistan recibirán certificados de concurrencia. Se invita á todos los presidentes y vocales de las juntas locales y á todos los amigos de la educación para que asistan y participen en las discusiones que serán libres para todos.

Se celebrarán dos conferencias ilustradas en cada instituto, una sobre la historia de América y la otra sobre panoramas americanos.

Geo. G. Groff,
Comisionado Interino de Instrucción.

They were planned to find employment for a group of teachers who were promised a monthly salary throughout the year. The schools closed in June, and Dr. Groff sent them over the island, as above noted. The time was not wisely chosen. It was summer. The heat made the labor very exacting. Most of the teachers were not in the districts where they taught. Being away, they did not attend. The summer schools were in session, and the teachers so employed were not expected to attend. Six of the English supervisors were in the States. There was no one to arrange for the sessions. There was no general announcement of the sessions that came to the teachers. Indeed, in one case, an acting supervisor, after the sessions closed in his district, was asked to write his opinion of the value of the institute to his teachers. He answered that there had been no institute in his district. In a personal interview, when the date and names of the teachers were given, he said he remembered that these people had been two days in his town; that they had talked to a few people, and that no results had followed. This is, of course, no criticism of the six men and women who struggled on in a work which they all knew was unwise and largely a waste of money. Lectures were given in English and interpreted; sloid was presented, although there is but one sloid teacher on the island and no equipment to do sloid work. Nature study was discussed, although no nature study is required in the course of study presented by law.

I will append a report of the attendance and pass the incident with the hope that the $3,036.06 spent for salaries and for expenses of these meetings may not have been wholly wasted, and the assurance that whatever work is done in this direction the current year will be done upon a wholly new basis.

At the close of the fiscal year $17,756.09 of the money available for salaries of teachers was unexpended. This was due to the fact that there were not as many schools opened as the funds made possible. This money was apportioned in unequal sums to the different municipalities, depending upon the number of schools they failed to open under the law.

The municipality opening the least number still was credited with the largest unexpended sum. There was a difference of opinion as to the availability of this unexpended sum for salaries in this school year. Upon exactly what authorization Dr. Groff acted in the matter is not known to me. He notified the local boards that they were entitled to this money and that they should open vacation or summer schools to expend it. The American teachers had for the most part gone north. Half the districts had no supervisor, and yet these schools were opened. No reports from half of them ever reached the department, and the auditor very properly ruled that the sum above cited reverted to the treasury as an unexpended balance, and that therefore these teachers could not be paid from that sum. Eighteen thousand dollars of the present year's budget had to be set aside to pay for the maintenance of these anomalous schools. The work of the department will be lessened by this amount, and at least sixty schools that could have been opened October 1 can not be provided for for lack of funds. This was a most serious blunder. The law provides for only nine months' schools. Some districts had as much as twelve. The Spanish system was to keep school all the year, that the teacher might always be on salary. Without giving reasons in detail, I feel that this was an ill-advised and unnecessary diverting of the funds of the present fiscal year to in part fruitless purposes.

So far as reports have reached this department, they are herein given, but they are by no means complete, and it is greatly to be regretted that these schools were opened to consume a fund that did not exist. The total cost of these schools was $17,779.

FAJARDO NORMAL SCHOOL.

On September 27, 1899, the military government accepted and approved the selection of a site for a normal and industrial school at Fajardo. By the terms of the contract made between the municipality of Fajardo and the military government, each party was to appropriate $20,000. The sum thus secured was to be used to purchase land, erect buildings, and equip the school for its specific functions. A tract of land was purchased, fenced, and supplied with a well, by order of the insular board of education. In this condition I found the project when I visited Fajardo, September 12, 1900. The principal was conducting a summer school in a rented house, and an additional house was being prepared in order that the school might have additional teachers. I

found some of the people impatient with
having elapsed and no substantial progress
This normal school is located in the extr
the island and is difficult of access. To rea
and entire western half of the island is very
to me a happy selection, although I did find
of the school at Fajardo, and these people
eration, and the contract must, no matter
action may be, be faithfully adhered to. I
ports three normal schools, and the patron
under such a plan wholly from the eastern
to me that the location is entirely satisfa
impossible for the department to give th
needs. The land purchased is evidently of
trial school than for the normal school, a
need a good industrial school. But it is not
including dormitories for students, with t
have advised the people of Fajardo to aw
petition for the same is now awaiting the a
lature in December. It is safe to assert t
additional to provide at this place a prope
proposed.

The normal department was opened Oct
selected a faculty of four trained teachers.
soon as the department can find proper appl
this normal school will be equipped and pr
Less than twenty are now enrolled. This
no slight degree to its inaccessibility.

The industrial department can not now
building suitable in the city of Fajardo, an
advertised widely not one teacher has been
work. An industrial school in Porto Rico
It must train the youth of the island into ha
to them skill in lines of effort peculiar to t
It would be altogether better if the Unit
the site of an agricultural experiment stati
the people—coffee, sugar, tobacco, and frui
central elements of the course of study.
ment will be, for the most part, poor boys
free boarding, lodging, and tuition. This h
But to do this involves an outlay in equipm
vastly beyond the present possibilities of t

At the commencement of the fiscal yea
opening of a summer session to be maintai
teacher was to do the entire work. Later
a small primary school, made up of childre
in the public schools, was also in operatio
I was unable to see the value of the work
ordered the session to close. Hearing tha
tract with Dr. Groff for $100 per month,
decided to allow him to continue the work
was easily done, because the entire numbe
work they were doing made it easy to ha
entire school. It is to be hoped that many

normal school, and that it will send out well-trained teachers for the schools. I must emphasize yet one other fact. This school has been a normal in name, not in fact. It will now be a normal in fact, with a course of study in some measure at least worthy the name. A copy of this course is appended hereto.

PROPOSED COURSE OF STUDY, FAJARDO NORMAL—TWO YEARS' COURSE.

(Finally, three years for professional equipment to teach.)

PREPARATORY YEAR.

First semester.—(1) Professional studies: School management and psychology and observations in model department and child study (four hours a week). (2) Language: English grammar, Spanish grammar (four hours a week). (3) Mathematics: Arithmetic (three hours a week). (4) Science: Descriptive geography, simple biology (three hours a week). (5) Art: Penmanship, composition (English), music, modeling in clay (four hours a week). (6) Civic studies: History of Porto Rico (three hours a week).

Second semester.—(1) Professional studies: Methods, standard psychology, observation in model department continued (four hours a week). (2) Language: English grammar, Spanish grammar, elocution (four hours a week). (3) Mathematics: Arithmetic (three hours a week). (4) Science: Physical geography, physiology and hygiene (three hours a week). (5) Art: Composition (English and Spanish), music, drawing (four hours a week). (6) Civic studies: History of the United States, colonial and revolutionary epochs (three hours a week).

JUNIOR YEAR.

First semester.—(1) Professional studies: History of ancient education, principles of education (four hours a week). (2) Language: American literature (three hours a week). (3) Mathematics: Algebra (three hours a week). (4) Science: Physics (three hours a week). (5) Art: Composition (English and Spanish), drawing, plastic modeling (four hours a week). (6) Civic studies: United States history, administration epoch (three hours a week).

Second semester.—(1) Professional studies: History of modern education, educational theory (four hours a week). (2) Language: Spanish and English literature (three hours a week). (3) Mathematics: Geometry (three hours a week). (4) Science: Biology (three hours a week). (5) Art: Composition (English and Spanish), water colors, gymnastics (four hours a week). (6) Civic studies: General history (modern), elementary civics (three hours a week).

SENIOR YEAR.

(To be deferred at present).

SCHOOL BUILDINGS.

There are no public-school buildings in Porto Rico. The schools are conducted in rented houses or rooms, and these are by no means suited for the work. Much of the value of instruction is lost owing to unsuitable rooms. In a few cities the schoolrooms are good, but the seating is primitive and in many places wholly lacking. A kindergarten teacher told me that her pupils came each day with chair or bench, and that those who were too poor to do this sat on the floor, and the sole sense of pride in the teacher was in the fact that the floor was clean. There is a crying need for good school desks. Some boards will provide them this year; but the great difficulty is not only the lack of funds, but the character and uncertain tenure of the rooms in which the schools assemble. In many cases the rent for these rooms was unpaid by the local boards at the end of the year. It was feared that some districts would be unable to retain present buildings or provide

This model and training school had no relation to the school system of the island. It was an institution unique in its character. Dr. Groff says "it was originally started as a school for American children." Of its work he says: "It was a laughing stock to all who knew anything about schools, but I thought it best to let it die easily." Just what it was and what it did I am unable to state.

After going carefully over the problem presented I decided to organize a thorough system of schools, from kindergarten to the third year of the high school. Excellent quarters are being fitted up in the Beneficencia Building in the city, and a full complement of experienced teachers has been secured. The school will open November 1 for a term of eight months. The course of study will be typical of the course of study to be gradually wrought into the system of education for Porto Rico. The school will thus have a double value. It will not only provide much-needed educational facilities for about 400 children, but it will also be a type of genuine educational work for the guidance of all the cities of the island. A copy of the course of study is appended.

SCHOOL BOOKS.

Dr. Groff advertised in Porto Rico and in New York for books and supplies for the current year. These bids were required to be on file here July 20, 1900. He informed me upon my arrival that no awards were made and urged that orders be placed at once. In his letter to me he says: "Last year bids were placed in August and some books did not get here until New Year. Books were being actively distributed in February." That the schools should be opened October 1 and books for the pupils arrive the following February needs no comment. I placed orders for the books actually needed in the schools, not for all that bids were solicited for, early in August, and when the schools opened in October the books were in the schools ready for the pupils. The fire of July 1 destroyed all the books in the stores of the board of education, and also all the books belonging to the district of San Juan. During the summer the schools of San Juan were conducted for three months with no books. The reason for this, as given by the English supervisor, is that the department did not call in from any of the other fifteen districts such books as were needed. I myself in September saw two schools in San Juan in which there were three and two books, respectively.

There was much confusion last year, due to the fact that advanced books were purchased in the English language. There can be no present use for histories, arithmetics, and grammars in the English language. This year the pupils in the graded schools are all taught English, and as soon as these pupils acquire sufficient English to think in the language, their informational studies may be in the English language. Every child must have at least one English text-book and as many more as it is profitable to provide. There is yet another matter. The schools had a course of study fixed by law, but the text-books furnished made it impossible to follow the course of study. As rapidly as it can be done the schools will be reorganized and put upon a systematic basis, and the text-books made to conform thereto. I may add that $33,000 was expended for books last year. We shall this year open 180 additional schools, properly equip all the old and the new to aged and indigent teachers. When the Spanish evacuation of San Juan occurred, it is claimed that about $40,000 of this fund was taken away without any authority in law. A claim for this sum, I believe, is now pending, through the patriotic efforts of Brig. Gen. George W. Davis, who had done nobly by this fund. He took the remainder of the fund under his care, directed the department of education to pay all just claims, and to foster the fund. This is now done by the department, and all pensions are paid regularly. This can not continue many years. There is now no pension fund collected, and it is only a question of years when the last payment will be made. In the meantime it is recommended that some equitable and legal means be established by which those owning the fund shall have some enlarged control of its disbursement. To us it is a sacred trust, which we are administering faithfully and at absolutely no expense whatever to the fund or pensioners.

LIBRARY AND MUSEUM.

The need of a complete exhibit of pedagogical literature, text-books, and school apparatus early impressed itself upon me. When rooms were secured for the department offices, it was arranged that two large and convenient rooms be set aside for this purpose. Requests for donations of exhibits were mailed to many friends in the States, and we have already received about 300 volumes and many pieces of school apparatus. These are being delivered here free by the Government transport service, and many additional donations will arrive in the next fortnight. The department will also purchase standard pedagogical works to the number of 500 volumes. In these rooms we shall have a complete pedagogical literature. These volumes are being carefully catalogued, and the rooms are open to the public daily from 8.30 a. m. to 4 p. m. Already many persons have come to consult the volumes to study the development of text-book making and to ascertain what is possible in the equipment of a first-class school.

This museum and library will be of great educational value. The teachers of Porto Rico never saw the best books and supplies. They know little of the vast array of school aids, and to them a visit to this department will be a revelation and an inspiration. Citizens also find here the possibilities for elementary education, and are led to request that school boards provide with increasing liberality the best material for the education of their children. Volumes from this library may, with the consent of the assistant commissioner of education, be taken from the rooms for a limited time. It is the purpose to make this library and museum serve in the fullest possible manner the need for authentic educational literature.

FREE PUBLIC LIBRARY.

Early in August I found in the rooms of the beneficencia building above 5,000 volumes of standard Spanish and American literature, and believing it to be a public service to utilize these volumes as a public library, I obtained the cordial assistance of Governor Charles H. Allen to the project. Three large and suitable rooms in the heart of the city, in the post-office building, were set aside for the library, and the governor named as a board of trustees to open and manage the

CONCLUDING REMARKS.

A system of schools is now in operation in Porto Rico. It has gathered to itself 800 teachers and 38,000 pupils. This is something to be grateful for. But it is only a beginning. There are about 300,000 children of school age for whom there is no school. That all of these could voluntarily attend school were they given the opportunity is, of course, not probable. That a large number of them would attend is manifest from the fact that the 180 new schools opened October 1 are now attended by a full quota of pupils. In many cases children are denied admission at the door, solely for lack of space, even on the floor, to receive them.

Of the details of the system it is not now necessary to write, nor does it seem prudent to draw conclusions from the meager data now at hand. I have no doubt many grave errors have been and will be committed. The schools can not be perfect; they can not even be satisfactory until they can meet in proper houses, under trained teachers, and with more specific supervision.

These schools, it should be remembered, are not to be measured by American schools and compared with American systems. They represent the civilization which prevailed here for centuries. They can only gradually be transformed into any other character. Americans here and in the States must not forget that a system of schools here may well serve the ideals of this people and not meet the full indorsement of American critics.

In general, it is safe to assert that the schools are more satisfactory to the native citizen than to the American who has not yet learned the ideals and racial characteristics of this people. The citizens of Porto Rico have been led to expect immediate changes of great moment. These have not come. They can not. A school is an evolution. It can not be decreed by any man's fiat.

What of the future? There are many perplexing problems to be met. There is a way to do this. It is possible to reduce the great illiteracy in Porto Rico. It must be done. The hope of the island is in the public schools. If these people are to share more and more in the large life of a pure democracy, they must be fitted for such enlarged participation by education. An educated people alone can maintain republican institutions.

It remains only to add that in the ten weeks of arduous labor here a system of administration has been instituted capable of meeting all reasonable demands. There are many essential and in some cases radical reforms to be wrought in the system. The department can cope with all these problems as they arise. What it can not do is to provide funds to enlarge its work. Given a fund equal to its possibilities, and this department will within a hundred days provide schools for 200,000 additional pupils.

(*c*) Reproduction exercises, but not pushed to the extreme. Drill on common abbreviations, punctuation, and capitalization. Spelling of words having the same sound and different orthography, or different sound and the same orthography.

(*d*) Memory work reviewed and continued. Selections taken not only from the readers in use, but from the reference library.

II. Numbers from 1 to 100, developing multiplication tables and simple elements of partition and division. Application of weights and measures. Simple fractional parts. Areas or simple solid bodies. Begin the use of a greater divisor than 10 for mid year. Original problems involving simple elements of the triangle, square, cube, etc. Considerable oral work.

III. Observation of habits of animals. History of distribution of animal and plant life. Development of plant from seed to fruit; growing plants, if possible, in the room. Observe each stage of their development. Useful animal productions, especially parts used for food and clothing. Use of seeds to man. Forms of water. Direction and distance of winds. Judgment of distance. Knowledge of local food and animal products. Continuation of hygienic lessons on the skin, use of bones, effect of narcotics and stimulants. Lessons on eating, drinking, breathing, sleeping, healthful foods and drinks. Use of the muscles. Kinds and time for exercise. The value of sleep.

IV. Continuation of and completing of reading of stories and fables, keeping in mind the related work in Group III.

V. Continuation of free-hand drawing, with objects, such as trees, animals. Study of pictures for story. Use of water colors. Drawing from nature in color. If possible, paper folding and paper cutting. Simple elements of definite drawing of lines, straight and curved, and simple geometrical magnitudes.

THIRD YEAR.

I. (*a*) Different portions of several second readers. Supplementary reader. Introduction of third reader. Copying and writing from dictation with ink. Frequent composition exercises, with increased attention to form and correctness. Attention to choice of words, forms of words, also to clearness and originality. Discussion of right form of sentences for the expression of thought. Memory work continued. Entire selections memorized.

II. Addition and subtraction with and without objects. Multiplication and division clearly developed. Application of familiar weights and measures. Fractional parts especially emphasized. Original problems submitted and worked. Comparative use of cubes and prisms. Simple geometrical elements, largely from observation and by construction, if convenient. Measurement of familiar distances and surfaces. Proper application of the same.

III. Analyses of simple plants, rocks, etc. Discussion of the qualities of objects. Adaptation of animals to their environment; plants to their environment. Discussion of changing length of day and night, and varying temperature. Life history of familiar plants. Teach cardinal points. Detailed study of some drainage system, developing concepts of valley, hill, slope, watershed, plain, etc. Discussion of erosive action of water, soil formation, water, record map of town, study of neighborhood, fixing points of compass. Flesh-making and heat-giving foods. Wholesome and unwholesome drink and foods. Simple lessons on digestion and circulation of blood. Care of parts of body, developing especially the moral value of cleanliness, neatness, tidiness, etc. Reading of books bearing upon the year's outline.

IV. Classical myths and stories, Bible stories, building in the mind, steadily, ideals of what life ought to be, how society develops, what the social body is, and the duties of each one in the social group. Simple elements of civic life. Functions of officers. Reason for law, for legal restraints. Duties to one's country, significance of a flag. Poems relating to the above.

V. Rote songs continued, and, if possible, simple musical elements. Illustrative drawing. Harmonious arrangement of colors. Beginnings of simple design.

FOURTH YEAR.

I. Complete third reader. Extend reading of supplementary matter. Reading of entire books assigned by the teacher. Specific instruction to pupils who have not learned to form letters well. Abundant composition and dictation exercises, noting, now especially, the development of a style, which shall be simple, clear, and in harmony with the character of the thought the child expresses. Reporting in writing the substance the books read. Engaging in conversation, for the purpose of development of fluent oral style. Memory work continued.

III. Study of vegetation in Porto Rico, dispersion of seeds. Effect of heat and gravity on water and air. Study of bird life and its dispersion. Simple laws of heat. Review the United States and Porto Rico geographically. Study Germany, France, and Spain. Simple lessons on Cuba, the Philippine Islands, on winds and ocean currents. The structure and convenience of the muscles and skin. The growth, waste, and renewal of the body. Simple laws of digestion, circulation of the blood, and the relation of the blood to health. Effect of alcohol on digestion and circulation. Suitable supplementary reading in harmony with the work of the year.

IV. Period of colonization and of the Revolutionary war, and some reference to the early administrations to the civil war, dwelling especially upon the personalities of the characters rather than the administrative problems. Stories connected with the history of Germany, France, Spain, Cuba, the Philippines, and other important countries to the pupils.

V. Drawing of plants and common objects. Analyses of leaves and flowers for color scheme. Study of famous paintings, using the results as language and history material. Drawings in mass of animals and children. Applications of arrangements in spaces of borders, surfaces, etc., using color with discretion. Accurate drawings of simple rectangular objects and the applications in appropiate material. Music and calisthenics as before.

THIRD YEAR.

I. The formal study of the sentence, parts of speech phrases, clauses, analyses of sentences, and drill on nouns and verbs.

II. Applications of percentage to insurance, interest, commission, taxes, etc. Business transactions and accounts. Thorough study of inclosed and solid contents of cylinder, pyramid, and cone.

III. Study of grasses and grains. Typical marine animals. Some plant family, as the rose. General review of North America. Study of Asia and Africa, noting especially colonies and dependencies with special lessons upon productions and government. Study of coal, its distribution and uses. The composition and purity of air, organs of respiration, including ventilation, disinfectants, exercise and clothing. vocal organs and their functions, effects of stimulants and narcotics.

IV. Ancient America, the Northman, voyages and discoveries of Columbus, the Cabots, and Vespucci. Special attention to United States history from 1763 to 1783. Reading from early history of England. Study of the local Government officials, by whom chosen, duties, etc. Study of insular government. Study government and United States Government to fix simple civic processes clearly in the mind.

V. Drawing continued in harmony with the work of the year before. Introduction of lessons in modeling and woodwork. Music and calisthenics.

FOURTH YEAR.

I. Study of literature. The reading of pedagogical selections and general survey of the field of English and Spanish literary development, dwelling especially upon the authors that have touched the life of Porto Rico. Study of the English language continued, including remaining parts of speech. Rules of syntax. Analyses of sentences.

II. Drill on definitions, rules, and formulas in arithmetic. Problems and theories relating to angles and lines. Angles, lines, circles, etc., beginning algebra, including factoring and equations with two unknown quantities. Simple accounts.

III. Study of poisonous plants and trees. Lessons on light, sun, and electricity. Comparative study of climate, winds, and states of society. The nervous system. Organs of the special senses. Effects of narcotics and stimulants upon the nerves. Appropriate reading relating to the above topics.

IV. Study of recent United States history. History of Porto Rico to the present time. Reading of English history of eighteenth and nineteenth centuries. Principles of State government. Object of laws and duties of citizens and of officials. Rights and duties of nations, war and arbitration.

V. Drawing in any medium of common objects. Analyses of beautifully-colored nature objects for color scheme. Study of buildings and their influence. Simple perspective. Study of historic ornament and complementary groups of colors. Continuation of industrial drawing and processes. Drill in music and calisthenics.

It is understood that this is a mere outline to be followed in the main. That in the primary school, the first year at least 40 per cent of the entire time should be devoted to Group I, 25 per cent to Group V, 12 per cent to Group II and to Group III, and the remainder of the time to Group IV. Continuing in this way until the third year, gradually lessen the time to Group I and to Group V, increasing the time in Groups II, III, and IV, in the order named, and in the first year of the intermediate grades giving 35 per cent of the time to Group I, 20 per cent to Group V, 15 per cent to Group II, 20 per cent to Group III, and the remainder of the time to Group IV. Carrying this general relation throughout the four years of the intermediate school, and never sacrificing the language work to any other feature of the course. It is understood further that in the rural schools, only that part of the course need be taken up which is not printed in brackets, but in the graded schools, so far as possible, the entire course of study should be undertaken with such modifications and omissions as may be absolutely necessary by local conditions, and which shall be made only by the advice and consent of the English supervisor of the district and the principal of the school. Do not allow pupils to enter a higher grade than the one in which they can do the work satisfactorily. It is easier to promote a child than to demote one. Therefore, in grading the children at the opening of the year it is better to put them in the next lower grade than in the one next higher. It is not so much a question of what grade a pupil is in as it is a question of what kind of work the pupil does in the grade. The teacher should under all circumstances equip herself in all the different groups of studies here provided for. It is further recommended, and even urged, that in each school there shall be collected a cabinet of appropriate objects for the proper presentation of these lessons. These objects may be gathered by the children and teacher in the neighborhood or purchased by the board of education, or made by the children themselves under the direction of the teacher. It is a poor school that does not, through its own sources, provide at least some equipment to do objective teaching. The real test of good teaching is to be found in the power of the child to think clearly and to express his thought in language, both orally and written, and no lesson should be considered well taught until the child has acquired the ability to give an intelligent report of its knowledge of that lesson. Remember that it takes time to grow mental power, and that to make haste slowly and to do good work well is better than haste attended by superficial knowledge.

Beyond all courses of study, and more important than any part or parts of the same, is the power of the teaching, and the life of a noble teacher, impressing upon the children from day to day the simple lessons of Christian manliness and womanliness, earnest devotion to country and home, and that series of civic, social, and moral virtues which in the aggregate make up a noble character. The end of all true teaching is right living.

Schedule of schools opened October 1, 1900.

[A gain of 180 above 1899.]

No.	District.	Principals.	Grade teachers, $50.	Grade teachers, $40.	Rural teachers.
I	San Juan	4	30		1
II	Rio Piedras	2		14	20
	1. Rio Piedras	1		4	6
	2. Carolina	1		4	6
	3. Trujillo Alto			3	3
	4. Loiza			3	5
III	Fajardo	2		18	19
	1. Fajardo	1		11	7
	2. Rio Grande	1		4	6
	3. Naguabo			3	6
IV	Humacao	2	8	12	22
	1. Humacao	1	8		8
	2. Yabucoa	1		4	5
	3. Juncos			3	4
	4. Vieques			5	5
V	Caguas	2	8	17	32
	1. Caguas	1	8		9
	2. Gurabo			3	5
	3. Aguas Buenas			3	4
	4. Cidra			3	3
	5. San Lorenzo			4	5
	6. Cayey	1		4	6
VI	Guayama	2	6	16	14
	1. Guayama	1	6		4
	2. Arroyo	1		4	1
	3. Patillas			3	4
	4. Maunabo			3	2
	5. Salinas			3	1
	6. Santa Isabel			3	2

Schedule of schools opened October 1, 1900—Continued.

No.	District.	Principals.	Grade teachers, $50.	Grade teachers, $40.	Rural teachers.
VII	Coamo	3	....	19	37
	1. Coamo	1	....	5	9
	2. Juana Diaz	1	....	4	12
	3. Aibonito	1	....	4	5
	4. Barranquitas	....	....	3	5
	5. Barros	....	....	3	6
VIII	Ponce	4	22	....	25
IX	Yauco	2	6	13	28
	1. Yauco	1	6	2	13
	2. Sabana Grande	1	....	4	4
	3. Guayanilla	....	....	3	4
	4. Penuelas	....	....	4	7
X	San German	2	7	12	23
	1. San German	1	7	....	7
	2. Cabo Rojo	1	....	5	8
	3. Lajas	....	....	4	5
	4. Maricao	....	....	3	3
XI	Mayaguez	3	13	8	29
	1. Mayaguez	2	13	....	19
	2. Anasco	1	....	4	4
	3. Las Marias	....	....	4	6
XII	Aguadilla	2	8	12	28
	1. Aguadilla	1	8	....	8
	2. San Sebastian	1	....	3	6
	3. Aguada	....	....	3	5
	4. Moca	....	....	3	5
	5. Rincon	....	....	3	4
XIII	Camuy	1	....	23	27
	1. Camuy	....	....	4	4
	2. Hatillo	....	....	4	5
	3. Isabela	....	....	5	9
	4. Lares	1	....	6	6
	5. Quebradillas	....	....	4	3
XIV	Arecibo	3	10	20	45
	1. Arecibo	1	10	8	14
	2. Utuado	1	....	6	19
	3. Adjuntas	1	....	6	12
XV	Vega Baja	3	9	14	28
	1. Vega Baja	1	....	4	6
	2. Vega Alta	....	....	3	4
	3. Manati	1	9	....	9
	4. Ciales	1	....	4	4
	5. Morovis	....	....	3	5
XVI	Bayamon	2	....	23	31
	1. Bayamon	1	....	5	12
	2. Toa Baja	....	....	3	3
	3. Toa Alta	1	....	3	2
	4. Dorado	....	....	3	2
	5. Corozal	....	....	3	3
	6. Naranjito	....	....	3	4
	7. Comerio	....	....	3	5
	Total	39	127	221	409

Report of summer schools for July and August, 1900.

JULY, 1900.

No.	District.	Graded schools.	Rural schools.	Days in session.	Boys enrolled.	Girls enrolled.	Total.	Left during session.	Admitted during session.	Teachers.
II	Piedras	2	1	22	110	38	148	9	6	3
IV	Humacao	1	......	22	38	......	38	2	0	1
	Yabucoa	4	2	22	124	41	165	12	14	6
VII	Ponce:									
	San Isabel	7	......	22	275	93	368	25	17	7
	Playa	4	......	22	88	89	117	18	6	4
	Vives Str	5	......	22	61	162	223	20	14	5
	American	6	......	22	100	136	236	10	8	6
X	San German:									
	Maricao	......	1	22	35	18	53	3	1	1
XIV	Arecibo:									
	Utuado	3	8	22	136	111	247	22	4	6
	Ajuntas	3	2	22	150	101	251	30	26	5
XV	Vega Baja:									
	Vega Alta	1	2	22	135	19	154	9	4	3
	Manati	1	8	22	91	37	128	49	43	4
	Ciales	1	3	22	161	50	211	3	7	4
	Morovis	2	4	22	208	35	243	35	5	6
	Total	40	23	22	1,718	937	2,655	247	131	61

AUGUST, 1900.

No.	District.	Graded schools.	Rural schools.	Days in session.	Boys enrolled.	Girls enrolled.	Total.	Left during session.	Admitted during session.	Teachers.
II	Piedias	2	1	23	85	33	118	0	6	3
VI	Humacao	1	......	23	36	......	36	0	0	1
	Yabucao	5	1	23	202	41	243	0	37	6
V	Guaguas:									
	Cidva	2	3	23	128	93	221	19	5	5
VI	Guayama:									
	Hato Grande	4	2	23	182	127	309	47	4	6
VIII	Ponce:									
	San Isabel Sto	7	......	23	253	81	334	28	36	7
	Playa	4	......	23	86	91	177	4	8	4
	Vives Sto	5	......	23	67	166	233	3	5	5
	American	5	......	23	65	113	178	18	5	5
X	San German:									
	Maricao	2	......	23	50	42	92	5	......	2
	Manillas	......	2	23	55	47	102	2	......	2
	Lajas	2	5	23	213	72	285	10	24	7
	Cabo Rojo	3	......	23	72	67	139	2	2	3
XIV	Arecibo:									
	Barceloneta	......	1	23	55	......	55	......	......	1
XV	Vega Baja:									
	Vega Alta	1	4	23	174	41	215	5	5	5
	Manati	1	3	23	116	54	170	26	21	4
	Ciales	2	8	23	178	87	265	17	17	5
	Morovis	2	4	23	186	51	237	8	13	6
	Total	49	28	23	2,208	1,211	3,414	193	188	77

Report of institute for teachers.

Place.	Date.	Day.	Teachers enrolled.	Attendance.	Remarks.
San Juan	June 25, 26	2	40	Fair	Failure.
Caguas	July 2-6	5	....	....	Do.
Aguadilla	July 9-13	5	27	Fair	Do.
Mayaguez	July 16-20	5	30	Good	Successful.
San German	July 23-27	5	36	.....do	Do.
Yauco	July 30-Aug. 3	5	38	.....do	Failure.
Ponce	Aug. 6-8	3	46	.....do	Satisfactory.
Coamo	Aug. 9, 10	2	11	Fair	Failure.
Guayama	Aug. 13, 17	5	25	Poor	Do.
Humacao	Aug. 20-24	5	24	Fair	Very satisfactory.
Fajardo	Aug 27-29	3	24	Good	Satisfactory.
Rio Piedras	Aug. 30, 31	2	....	Poor	Failure.
Vega Baja	Sept. 3-6	4	31	Excellent	Very satisfactory.
Camuy	Sept. 6-8	3	26	.....do	Satisfactory.
Arecibo	Sept. 10-14	5	23	Fair	Unsatisfactory.

These remarks are from the reports of the English supervisors.

Monthly disbursements from May to September, 1900.

Items.	May.	June.	July.	August.	September.	Total.
Office salaries	$924.17	$1,045.38	$1,141.93	$1,241.35	$1,319.63	$5,672.41
Office expenses	247.80	474.24	173.18	209.77	156.87	1,261.96
English supervisors	1,200.00	1,050.00	875.10	975.00	1,050.00	5,150.10
Teachers' institute:						
Salaries			500.00	600.00	513.34	1,613.34
Expenses		320.85	382.14	221.51	498.22	1,422.72
Normal school:						
Salaries	104.00	104.00	161.96	104.00	104.00	577.96
Expenses			13.35	2.00	130.64	145.99
Model and training school:						
Salaries	880.33	974.37				1,854.70
Expenses	33.03	16.43				49.46
Common schools, teachers' salaries.	22,285.00	23,681.60	7,441.91	6,317.91	4,021.92	63,748.34
Purchase of text-books and supplies.					9,341.69	9,341.69
Transportation of text-books and supplies.	23.81	70.04	7.27	8.46	79.96	189.54
Library and museum purchases		29.71				29.71
Total	25,697.64	27,766.57	10,696.84	9,680.00	17,216.27	91,057.32

SAN JUAN, P. R., *August 24, 1900.*

To the English Supervisors.

GENTLEMEN: We need to know at once how many English teachers from the United States will be needed in your district the coming school year. How many of this number do you know to be employed in your district? How many new American teachers can safely be provided for in your district? Please give me immediate and full data.

Respectfully, yours, M. G. BRUMBAUGH.

SAN JUAN, P. R., *August 25, 1900.*

To the English Supervisors.

GENTLEMEN: Some months ago Dr. Groff asked the English supervisors to furnish him with an estimate of the number of text-books which would be required in their various districts for the coming year. These reports were destroyed by fire, and it is necessary to ask supervisors to furnish me with a new estimate of their requirements. It is not necessary to state what author's book is required, but simply to make up an estimate of the numbers and kinds which are desired. For instance, so many first readers, so many second readers, so many primary arithmetics, etc.

Also let us have an estimate of the quantities of school supplies which will be necessary, basing your estimate of the kinds on the list which was sent out last year.

It is earnestly requested that you give this matter your immediate attention, and let me have your views on the subject at as early a date as possible. It is likely that a great many books will have to be ordered from the United States; and it is desirable that the orders should be forwarded at once.

Yours, respectfully,

M. G. BRUMBAUGH,
Commissioner of Education.

SAN JUAN, P. R., *September 6, 1900.*

To the English Supervisors.

GENTLEMEN: I have gone carefully over your statements concerning the number of new American teachers that may be needed in your district, also your statement of supplies needed for next year, and request for additional schools in at least some of your territory. I wish to thank you for these replies and to assure you that these three matters will be given early attention in this department. I wish also to say to you that I want every school opened on the 1st day of October, if possible, and no teacher who has made a contract with any board in your district to open a school on the 1st of October will have any legal rights under such contract unless that teacher is there ready to fulfill the contract on the 1st of October. I make this statement now because I find that a great many American teachers remained here, I think unwisely, and taught during the summer months, and now, at the very close of the vacation, wish to run up to New York and the States. They will not be able to get back here before the 1st of October, and I do not propose to have the work of this department crippled through this means, and you will do a kindness, not only to me, but more especially to any American teacher whom you may know to fall within this category, if you will inform them of this fact.

I have not secured from all the municipalities a definite statement of the condition of rent on schoolhouses, but I propose to make a new apportionment of the number of schools for each municipality, and if possible announce it this week or early next week. I propose also to say that unless a municipality opens as many schools as it is legitimately entitled to, I will transfer the money from that municipality to some other municipality that will open schools for the nine months beginning October 1. I mean absolutely to close the schools at the end of the nine months over the entire island. If you know any reason why these steps are not wise, please let me know immediately.

Yours, truly,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, *September 6, 1900.*

To the English Supervisors.

Gentlemen: In your requisition for copy books for next year you have not stated whether you desire the copy to be in English or in Spanish, and I would like you to give me your candid opinion as to the above matter. Should the copy be in Spanish wholly or in English wholly, or in both Spanish and English; that is, Spanish on one page and the same copy in English on the opposite page of the book?

Please give me an immediate answer.

Very respectfully,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, *September 7, 1900.*

To the English Supervisors.

Gentlemen: In a few days the treasurer of Porto Rico will distribute to the various municipalities of the island the sum of $30,000, which money will be the property of the municipalities of Porto Rico. I do not know the exact condition of the rent problem in your district, but I write you, as a suggestion, is not this a first-class time to stir up your municipality to take part of this money and pay off all rent of last year and start on a new basis October 1? I hope that you will be able through this information to get some assurance that this will be done before other causes absorb the money.

Yours, very truly,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, P. R., *September 15, 1900.*

To the English Supervisors.

Gentlemen: I have on the way here from the United States a group of twenty or thirty teachers, most of whom have never been on the island before. These teachers are graduates of first-class normal schools or colleges; they have all had experience in teaching in the United States, and the most of them speak some Spanish, just how much I am unable to determine. These teachers must have the first vacancies in the various districts, since they come here under contract with the present administration. It is expressly understood that the teachers who have been here before and who have made no application to this department for places will not be given schools until the ones above named are provided for. This seems to me to be eminently just, since those who have been here ought to have made such a record as to have secured for them contracts for the year to come before they left. You will, therefore, please make a note of this fact and arrange for the appointment of the English teachers who are coming at the direction of this department; after which we will do the best we can to place others who are worthy and competent. In all cases see to it that no teacher enters your district who does not have a valid certificate. I will not issue to American teachers certificates to teach on the island unless they have diplomas from accredited schools, or unless they pass here a rigid examination for the work. It would be of service to this department to know as nearly as possible the exact number of schools and the places where these English teachers may be placed. This in addition to the general request made of you some time ago.

I may add that in the additional schools which I propose opening I will make arrangements for at least some of the English teachers, full details of which will be forwarded to you at the earliest moment possible.

Yours, truly,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, P. R., *Septembar 19, 1900.*

To the English Supervisors.

Gentlemen: The certificates mailed out to you for the teachers who took the last examinations are in new form and are made for one year only. You will please state expressly, in handing these to the teachers, that the certificate is as good as any certificate on the island, and that school boards must so regard them; and that these teachers who hold this one year's certificate have every right and equal standing with every other teacher in the matter of application for places, and this limitation of the certificate to one year has been made by this department after mature thought and as the beginning of a process by which we hope to put the teaching of this island on an entirely new and what we believe to be a successful basis. It will not be any use for the teachers to petition this department for new certificates.

Very respectfully, yours,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, P. R., *September 19, 1900.*

To the English Supervisors.

Gentlemen: Hereafter when any letter that affects your relations in your district is sent from this office to any teacher, patron, or school board, a copy of that letter will be sent to you in order that you may know what matter from this point enters your district. This is done to strengthen your hands in the administration of your public duties. I wish, also, to say that on and after October 1 you will be allowed, in addition to your $75 per month, $12 a month for the nine months that your school term continues and $4 per month for the three months' vacation, as an aid in defraying your expenses. You will need to submit to this office, at the end of each calendar month, properly signed receipts or vouchers for the expending of this sum, and the check in payment for same will be forwarded to you. This is practically an increase in your annual salary of $120, which I am very glad to give to you, and hope it will make it easier for you to effectively discharge your duties.

Yours, very truly,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, P. R., *September 21, 1900.*

To the English Supervisors.

Gentlemen: To-day I transmit to you carbon copies of the letters sent to the different school boards in your district, in which copies you will see the number of schools of the different kinds assigned by this department to each of these municipalities.

You will now take up, in harmony with the spirit of these notes, the question of opening the schools as rapidly as you possibly can, and telegraph here for additional direction in case you meet with any serious complications in carrying out your part of this work, and we look to you for its successful execution. Please see to it that in opening a new rural school the largest barrio in population, as a rule, is given first chance, and if it refuses to provide the school, then to the next largest, and so on, subject, of course, to local conditions and your own judgment.

In the supplies about to be sent you, please note that no more Appleton readers and no more Riverside primers will be sent you. The copies you now have should be put in the rural schools as far as possible, and the Standard readers, which form a graded series, should be placed in the graded schools, that the reading throughout may be connected and graded.

Yours, respectfully,

M. G. Brumbaugh,
Commissioner of Education.

San Juan, P. R., *October 10, 1900.*

To the English Supervisors.

Gentlemen: Three things.

First. Will you report here before the end of this month the exact day when each teacher in your district began work, in order that the salary may be regulated accordingly and checks sent promptly to the teachers for the amounts due them? If possible, send us this information before the 20th, and as much earlier as you conveniently can.

Second. We find frequently that a teacher after making a contract with one board goes to another district and makes another contract with another board, and the two contracts come to this office. We expect boards of education to keep the contracts on their part sacredly, and we must therefore insist upon teachers doing the same, and you will kindly inform the teachers of your district, in whatever way you think best to do so, that a teacher who makes a contract must abide by it unless he obtains the permission of this department and the approval of the English supervisor to a change of place. Otherwise, we shall have hopeless confusion in the teaching force of the island.

Third. See to it that all American teachers sign contracts promptly upon their arrival and forward a copy of the same to this office, and no American or any other teacher shall be allowed to teach a single day unless said teacher has a legal certificate.

Respectfully, yours,

M. G. Brumbaugh,
Commissioner of Education.

INDEX.

A. Page.

- Alaska:
  - Absence of land titles, 48
  - Bee culture in, 67
  - Cape Nome, population, 22
  - Care of insane in, 42
  - Census begun, 47
  - Census details, 54
  - Coal mining at Cook Inlet, 8, 60, 61
  - Commercial company, 15
  - Commissioner's fees, 9
  - Condition of natives, 33
  - Conditions at Cape Nome in 1900, 7, 15
  - Cook Inlet, coal mining at, 8
  - Cook Inlet district described, 58
  - Copper in Sushitna district, 62
  - Cost of freight per ton for miners' supplies, 20
  - Customs receipts for fiscal year, 66
  - Delegate in Congress required, 49
  - Destitution among natives, 51
  - Eskimos, plea for, 35
  - Fees of United States marshals, 10
  - Fish industry in southern district, 56
  - Fox farming in, 42
  - Freight rates, 17
  - Fur sealing in, 40
  - Gold mining on Cook Inlet, 59
  - Gold mining in southern district, 55
  - Gold output at Koyukuk, 28
  - Gold production, see under Mining.
  - Industries in, 8
  - Interior lines of communication, 20
  - Kenai Peninsula described, 59
  - Knik River district described, 62
  - Koyukuk, conditions at, 23
  - Land laws criticised, 10
  - Lawsuits at Nome, list of, 7
  - Library and museum, financial statement, 70
  - Light-House service, 35
  - Liquor selling in, 8
  - List of civil officers, 6
  - List of newspapers in, 67
  - List of post-offices in, 68
  - Marine hospital at Dutch Harbor, 38
  - Marine-Hospital service report, 63
  - Marshal's fees, 9
  - Military Department of, created, 64
  - Military telegraphs and cables in, 39
  - Mining—
    - Alaska-Mexican Gold Mining Company—
      - Mine and mill, 28
      - Yield of ore, 28
    - Berners Bay (quartz), 30
    - Chesna, gold diggings at, 25
    - Circle City, 24
    - Eagle City, gold production of, 24
    - Funter Bay, 31
    - Kautack Island, gold at, 25
    - Ketchikan mining district, 29
    - Koyukuk, mining at, 23
    - Lituya Bay, beach washings at, 25
    - Quartz mining in, 25
    - Rampart City, gold mining at, 24
    - Rodman Bay, Baranof Island, 31
    - Salisbury Sound, 32
    - Sheep Creek mine, 30
    - Silver Bay, 31
    - Silver Bow Basin mining district, 30
    - Snettisham mining district, 30
    - Staking placer claims, 23
    - Sum Dum Chief mining camp, 30
    - Sunrise, gold diggings at, 25
    - Tanana diggings mentioned, 24

Page.

- Alaska—Continued.
  - Mining—Continued.
    - Treadwell Mining Company's mine and mills, 26, 27
    - Treadwell Mining Company, yield of ore, 27
    - United Gold Mining Company, yield of ore, 28
    - Windham Bay mining camp, 30
  - National Guard, 38
  - Natives of Cook Inlet, 61
  - Nome, cost of living at, 22
  - Nome, stampede to, 21
  - No public surveys yet made, 65
  - Notaries public, list of, 44
  - Organization of the Territory, 6
  - Passenger tariffs, 17
  - Petroleum in Cook Inlet, 61
  - Post-Office service, 36
  - Prices of miners' supplies, August, 1900, 68
  - Public library and museum, 47
  - Public schools in, 44
  - Public surveys, estimates for, 65
  - Railway from Port Clarence to Nulato, suggested, 16
  - Reindeer in, 41
  - Report of the governor for 1900, 5
  - Revenue-cutter service, 36
  - Russians in Cook Inlet, 60
  - Salmon fisheries in Cook Inlet, 60
  - Salmon fisheries, statistics, 49
  - Seward Peninsula, mentioned, 16
  - Sickness among natives, 51
  - Surveys (coast and geodetic, magnetic and geological), 37
  - Sushitna River district described, 62
  - Timber in southern district, 57
  - Title to coal lands, 12
  - Title to homestead lands, 12
  - Transportation in, 14
  - Treadwell Gold Mining Company, production, 26
  - Volcanoes on Cook Inlet, 59
  - Volunteers for China, 64
- Allen, Charles H., governor of Porto Rico, letter of transmittal to Secretary of the Interior, 714
- Arizona:
  - Agricultural experiment station of university, works of, 85, 118
  - Agriculture in, 85
  - Arid lands in, 129
  - Assaying and treating ores, fees for, 119
  - Banks, condition of, 79
  - Building and loan associations in, 80
  - Cattle imported, 84
  - Condition of Indians in, 122
  - Condition of live-stock industry, 90
  - Condition of mining, 91
  - Copper mining in, 92
  - Cost of school supervision, 96
  - Course of study in the university, 110
  - Crops (staple, roots and vegetables, fruits), 87
  - Education, 94
  - Exports and imports, 83
  - Financial statement, school funds, 97
  - Forests in, 92
  - Horticulture in, 85
  - Imports and exports (with Mexico), 83
  - Indebtedness June 30, 1900, 78
  - Indian labor, statistics, 124
  - Indian school at Phoenix, 126
  - Indian statistics, 123

Page.

- Arizona—Continued.
  - Irrigation, Federal aid for water storage. 129
  - Land entries for fiscal year ... 81
  - Land values in ... 78
  - Legislation by Congress recommended ... 131
  - Live stock, value in ... 78
  - Mining in ... 91
  - Normal schools ... 102
  - Official register of the State ... 131
  - Ornamental and shade trees ... 93
  - Pine timber in ... 92
  - Population of ... 71
  - Production of mines for 1899 ... 92
  - Property valuation by counties ... 72
  - Public buildings ... 127
  - Railroads in ... 82
  - Receipts and expenditures for schools ... 96
  - Report of the governor of ... 71
  - Resources of ... 128
  - School census and statistics ... 96
  - School districts and schools ... 95
  - School of mines ... 115, 119
  - School population and attendance ... 95
  - School property and bonded debt ... 96
  - School statistics ... 96, 98
  - School statistics discussed ... 99
  - Statehood recommended ... 130
  - Status of lands in ... 81
  - Sugar beets, experiments with ... 87
  - Taxable property, increase of ... 71
  - Tax levy for 1900 ... 72
  - Teachers' statistics ... 96
  - The Indian school at Phoenix ... 126
  - The museum at the university ... 104
  - Trees and shrubs of ... 93
  - University, the Territorial (library, museum, laboratories, engineering, mining, metallurgy, etc.) ... 103
  - University, courses of study at ... 110
  - Valuation (by counties) of property in 1900 ... 72
  - Valuation of railways in ... 77, 78
  - Water storage (Federal aid for) ... 129
  - Water storage in ... 85
- Artesian wells. (*See under* New Mexico.)

B.

- Baca, Manuel C. de, superintendent of public instruction of New Mexico, report of ... 178
- Barnes, C. M., governor of Oklahoma, report of ... 687
- Baranof Island, Alaska, gold mining at ... 31
- Brumbaugh, M. G., commissioner of education for Porto Rico, report of ... 746

C.

- Cement. (*See under* New Mexico, Colfax County.)
- Climate, (*See under* the several Territories.)
- Coal. (*See under* the several Territories.)
- Colored people, education of. (*See under* Oklahoma, Langston University.)
- Cook Inlet Coal Fields Company, Alaska ... 60
- Copper mining. (*See under* the several Territories.)

D.

- Dole, Sanford B., governor of Hawaii, report of ... 686

E.

- Elliott, W. H., commissioner of interior of Porto Rico, report of ... 718

G.

- Gold mining. (*See under* the several Territories.)

H.

- Hawaii:
  - Banana production ... 694
  - Coffee production ... 692
  - Corporations in ... 697

Page.

- Hawaii—Continued.
  - Education, administration of ... 705
  - Forests and lumber in ... 696
  - Fruit-growing experiments in ... 695
  - Illiteracy in ... 705
  - Imports and exports ... 700
  - Labor conditions in ... 702
  - Land leases, etc., 1898–99 ... 691
  - Land patents (grants), 1898–99 ... 691, 712
  - Legislation required on various subjects. 709
  - Live stock in, insufficient for demand ... 696
  - Natives, condition of ... 702
  - Passenger movements ... 701
  - Pineapple production ... 694
  - Population of, by nationalities ... 689
  - Public buildings ... 704
  - Public lands, area and value of ... 710
  - Railroads in, account of ... 697
  - Reform-school statistics ... 706
  - Report of governor of ... 689
  - Revenue of ... 690
  - Rice production ... 692
  - School statistics ... 705, 706, 707
  - Street railways in ... 699
  - Sugar production ... 692
  - Taro production ... 694
  - Taxable value of property in ... 690
  - Territory land office, transactions of, since June, 1900 ... 711
  - Tobacco in ... 694
  - Undeveloped resources of ... 708
  - Value of carrying trade, by nationalities. 701
- Health resorts in New Mexico. (*See under* each county, climate.)

I.

- Irrigation. (*See* New Mexico and Arizona.)

J.

- Jicarilla Indians. (*See under* New Mexico.)

L.

- Land values. (*See* separate Territories.)
- Langston University, Oklahoma, for colored people ... 594
- Live stock. (*See under* each Territory and county.)

M.

- Mescalero Apache Indians. (*See under* New Mexico.)
- Murphy, N. O., governor of Arizona, report .. 71

N.

- New Mexico:
  - Accidents in coal mines ... 445–454
  - Agricultural experiment station work. (*See* College of Agriculture *passim.*)
  - Agriculture in ... 370
  - Akers coal mines, inspector's reports ... 420
  - Alamogordo, county seat of Otero County, rapid growth of ... 530
  - Albuquerque, account of ... 488
  - Alfalfa hay in ... 377
  - Alum in ... 401
  - Amount of money for school purposes ... 181
  - Ancient pottery in ... 475
  - Apportionment of the Territory into districts ... 154
  - Appraisals of land must precede lease ... 172
  - Aridity of, explained ... 134
  - Assessed value for taxation ... 142
  - Assessed value and indebtedness by counties ... 293
  - Assessment and taxation under constitution ... 157
  - Auditor's quarterly statements ... 282
  - Ayers coal mine, inspector's report ... 422
  - Banks holding Territory funds, list of ... 275
  - Bank statements in ... 298
  - Bar association, account of ... 260
  - Beet sugar, in ... 363
  - Bernalillo County—
    - Agriculture in ... 484
    - Copper in ... 487

Page.

- New Mexico—Continued.
  - Bernalillo County—Continued.
    - Gold and copper mines 405, 409
    - Industries of 482
  - Bill of rights 146
  - Bland mining camp, gold mines of 486
  - Blossburg coal mine, inspector's report 432
  - Board of health, report of 311
  - Board of pharmacy, report of 313
  - Bonded debts of counties 287
  - Canadian River, section described 361
  - Canaigre-plant industry 373
  - Capitol building, account of new, including dedication, etc 301
  - Capitol rebuilding board, report of 301
  - Carbonate and sulphate of soda, beds of 400
  - Carthage coal mine, inspector's report 439
  - Catalpa coal mine, inspector's report 415
  - Catholic care of education in 179
  - Cattle and sheep industries, opportunities offered by 467
  - Cattle, prices of, in 1900 468
  - Cattle sanitary board, report of 468
  - Cattle statistics 468
  - Celery production 375
  - Central, Grant County, lead, silver, and gold at 514
  - Cerillos district 405
  - Cerillos mining camp, silver, lead, zinc, iron, and lime at 545
  - Chautauqua, a proposed 288
  - Chaves County—
    - Artesian wells in 491, 492
    - Fruit raising in 493
    - Organized 490
    - Population of 495
    - Stockraising in 491, 494
  - Christian Brothers' School in Santa Fe in 1859 179
  - Churches in 571
  - "Cliff dwellers" in 473
  - Cliff dwellings, extent of 476
  - Climate. (*See* in description of each county.)
    - And crop report 320
    - Effect of upon tuberculosis (by Dr. Francis Crosson) 327
    - Relative to consumption 331
  - Climate and tuberculosis 327
  - Climatological table, 1899 324
  - Cloudcroft Park, Otero County, summer resort 582
  - Coal in 402
  - Coal measures at Madrid, Santa Fe County 545
  - Coal miner's annual contract blank 458
  - Coal-mine inspector's report 409
  - Coal mines, accidents in 445
  - Coal mines—
    - At Gallup 411
    - Names and addresses of superintendents and managers 442
    - New and abandoned, list of 440
    - Prices paid for labor in 457
    - Table of employees 443
    - Table showing how worked, ventilation and power 440
    - United States laws governing their working 454
    - The W. A. Clark, output 409
    - Ventilation. (*See under* the various mines.)
  - Coal mining—
    - Cost of 457
    - In Bernalillo County 409
  - Coals, analyses of 441
  - Coal trade, table of statistics of 442
  - Cochiti district, geology of 405
    - Mines in 406
  - Coke produced in 444
  - Colfax County—
    - Artesian wells 498
    - Cement in 497
    - Coal mines in 432, 496
    - Education in 498
    - Gold mines in 497
    - Lumber, cattle, fruit in 497
    - Petroleum in 497

Page.

- New Mexico—Continued.
  - Colfax County—Continued.
    - Plumbago in 498
    - Population of 496
  - College of Agriculture and Mechanic Arts 214
    - And agricultural experiment station, report of director 214
    - Department of chemistry, experiment station, work of 217
    - Engineering department 216
    - Regents and faculty 222
    - Situation, origin, revenues 224
    - Statistics of 181
    - Work in zoology and soil physics 220
    - Work of entomological department 217
  - Commissioner's (land) office, accounts of 177
  - Consumption—
    - Disinfection precautions 311
    - Hospital for sailors (Marine-Hospital Service) reports 330
    - Hospital for soldiers, report 331
    - Sanitariums in 341
  - Cook and White coal mine, inspector's report 423
  - Copper (native) in 404
  - Copper mines—
    - In Santa Fe County 404
    - Of Santa Rita 512
  - Copper mining in 392
  - Corporations, constitutional provision for 159
  - Counties, list of 481
  - Court of private land claims, condition of business 269
  - Crop review of 1899 321
  - Crown Point coal mine, inspector's report 417
  - Dawson coal mine, inspector's report 436
  - Davis Canyon coal mine, inspector's report 436
  - Deaf and Dumb Asylum, report of president 239
  - Dental examiners, report of board 319
  - District courts' statistics of business by counties 261
  - Donna Ana County—
    - Agricultural products of (alfalfa, wheat, corn, fruits, vegetables) 499
    - Agriculture in 498
    - Climate of 502
    - Mines in 501
  - Deming, situation and business of 511
  - Eddy County—
    - Climate of 506
    - Geography of 507
    - Irrigation in 504, 507
    - Live stock in 504
    - Mineral springs in 506
    - Products of 507
    - Railways in 505
  - Educational association 183
  - Education—
    - Board of. and school superintendents, names of 178
    - History of, in Territory, from early times 179
    - Provisions for, by constitution 155
    - Tax provided for, by constitution 156
  - Elective franchise, qualifications for 153
  - Elevations along the Santa Fe Railroad 170
  - English-speaking population, per cent of 182
  - Enlistments of volunteers 142, 145
  - Executive department, powers and duties of 149
  - Fatal accidents in coal mines 445
  - Financial statements of counties (bonded debts) 287
  - Fire insurance companies in 276
  - Folsom hot springs 344
  - Forest lands withheld from selection 172
  - Forests, protection of 161
  - Forest reserves—
    - Area of 469
    - Condition of 471
    - Retard settlement 469
    - Settlers on, removed by Government 470
  - Forestry, report of acting superintendent of 472

Page.

New Mexico—Continued.
- Fort Stanton consumption sanitarium ... 337
- Free text-books for public schools ... 156
- Fruits of ... 135
- Fuel Company's coal mine ... 420
- Funded debt, statement September 3, 1900. 275
- Gallup coal mines ... 411–419
- Gallup—
  - Coal mines, inspector's report ... 413
  - Lignite coal at ... 485
- Game and fish in ... 572
- Geographical situation ... 133
- Geological characters of ... 387
- Geological report on by university ... 209
- Gila and Colorado river section described. 362
- Golden mining camp, Santa Fe County, ores of ... 544
- Gold mines at Pinos Altos ... 513
- Gold mines in ... 391, 394
- Gold mining at Hillsboro, Sierra County ... 552, 553
- Gold-ore, cyanide treatment at Hillsboro. 554
- Grant County—
  - Agriculture in ... 509
  - Canaigre farm in ... 509
  - Gold mines at Pinos Altos ... 513
  - Hot springs in ... 510
  - Live stock in ... 509
  - Mines of ... 512
  - Reservoirs in ... 509
  - Various mining camps in ... 515
- Grasses of ... 380
- Grape culture in ... 366
- Guadeloupe County—
  - Climate of ... 516
  - Fruits of ... 515
  - Grazing in ... 515
  - Minerals of ... 516
- Gypsum deposits in ... 400
- Hadley climatological laboratory, the ... 210
- Hanover, iron mines at ... 514
- History of, from 1598 ... 178
- Home market ample for produce ... 383
- Horticultural Society ... 370
- Horticulture in ... 368, 370
- Hot springs in ... 343–349
  (*See* the several counties.)
- Hudson hot springs ... 347
- Immigration bureau, report of ... 349
- Indebtedness and assessed value ... 293
- Industries of, by counties ... 482
- Insane asylum, report ... 256
- Internal-revenue collections ... 294
- Iron mines at Hanover, Grant County ... 514
- Iron-ore deposits in Otero County ... 529
- Irrigation—
  - Advantages of ... 361
  - And water-rights commission, report of ... 351–359
  - Commission for selecting lands for ... 359
  - Projects ... 360
  - Provision for ... 354, 355
  (*See under* each county.)
  - Records kept by College of Agriculture ... 221
  - Supply for ... 361
- Jarilla mining district, Otero County ... 527
- Jemez hot springs ... 345
- Jicarilla Indians—
  - No school for ... 252
  - Number of ... 252
  - Produce and live stock of ... 252
- Judicial affairs ... 259
- Judicial department, powers and duties of ... 151
- Kaolin and fire clays in ... 400
- Kutz coal mine, inspector's report ... 439
- Land for entry ... 136
- Lands granted to, for schools and other institutions ... 173
- Land grants—
  - For reservoirs and irrigation ... 353
  - For Territory institutions ... 353
  - For university ... 352, 353
- Lascruces, public buildings in ... 499
- Las Vegas—
  - Analyses of water ... 539, 540
  - Artesian mineral wells near ... 539

Page.

New Mexico—Continued.
- Las Vegas—Continued.
  - County seat of San Miguel County, account of ... 536
  - Hot springs ... 344
    - Climatotherapy at ... 537
- Lead, silver, and gold at Central, Grant County ... 514
- Leases of school lands (table) ... 174, 175
- Legislative department, powers and duties of ... 147
- Lincoln County—
  - Coal mines ... 420
  - Coal in ... 519
  - Fruit culture in ... 517
  - Gold, copper, lead in ... 518
  - Gold mines in ... 517
  - Iron ore in ... 519
  - Live stock statistics ... 516
  - Marble in ... 519
  - Mineral belt of ... 517
  - Schools in ... 519
  - Situation, climate, population, industries ... 516
- List of newspapers, Spanish and English, giving politics and religion ... 569
- Live stock in Chaves County ... 491
- Lucas coal mine, inspector's report ... 429
- McBroom's coal mine, inspector's report. 439
- McKinley county—
  - Boundaries of ... 523
  - Coal mines of (Gallup) ... 524
- Mesa coal mine, inspector's report ... 436
- Mescalero Apache Indians:
  - Agency and boarding school, report of superintendent ... 240
  - Becoming civilized ... 247
  - Boarding school, statistics ... 247
  - Herds owned by ... 246
  - History of ... 244
  - Reservation, described ... 240
  - Reservation, effect of cutting timber on ... 242
  - Self-sustaining ... 246
- Mescalero Indian Reservation, to be opened ... 531
- Meteorological data (table), 1899 ... 323
- Meteorology observations ... 221
- Mica, mines in ... 404
- Military Institute:
  - Account of ... 225
  - Cadet expenses at ... 230
  - Cadets appointed by counties ... 230
  - Course of study at ... 228
  - Inspection of, by adjutant-general ... 297
  - Statistics of ... 181
- Mineral belt in ... 393
- Mineral resources ... 394
- Mines and mining districts in ... 391
- Mines, placer and quartz ... 396
- Mines and ores of Socorro County ... 557
- Mining activity increasing ... 394
- Mining and water rights, constitutional provisions for ... 160
- Mining claims:
  - How located ... 399
  - Law for locating ... 408
- Mining districts, map of ... 408
- Mining, geology of ... 388
- Mining machinery (*see under* the various mines).
- Mining regions described ... 396
- Monero coal mines, inspector's report ... 437
- Mora County—
  - Coal in ... 522
  - Crops of ... 521
  - Ores of ... 522
  - Resources of ... 523
  - Situation and extent of ... 520
  - Stock raising ... 520
  - Sugar beet in ... 521
  - Timber in ... 520
- Municipalities and counties, how created. 158
- National guard, report of adjutant-general on ... 295
- Normal institutes ... 183
- Normal school of Silver City, statistics of. 181
- Normal school, report of director ... 237

New Mexico—Continued.
  Normal University:
    Report of director................
    Statistics of.........................
  Northwest section of, described ......
  Official register, 1900..................
  Ojo Caliente, hot springs.............
  Old Abe coal mine, inspector's report
  Omara coal mine, inspector's report..
  Otero coal mine, inspector's report...
  Otero County—
    Agriculture in.....................
    Cattle grazing in...................
    Climate of.........................
    Coal fields in.......................
    Fruit culture of...................
    Gypsum in.........................
    Iron ore in........................
    Labor in, scarce....................
    Lumber regions in.................
    Mescalero Indian Reservation tc opened ....
    Precious metals in.................
    Railways in ....
    Schools in ....
    Timber in ....
    Wealth and population of ....
    When organized, area of ....
  Penitentiary, report of superintenden
  Pharmacy law........................
  Pharmacists, registered, list of........
  Physical geography of................
  Pictographs on cliffs...................
  Placer mines, new ....
  Poison law................................
  Political history of.....................
  Population—
    Discrepancy with census enumera discussed ....
    Estimate...........................
  Population in 1829 and 1840...........
  Pottery, glazed, in ancient dwellings
  Precious stones in ....
  Prehistoric remains....................
  Pinos Altos gold mines...............
  Productions of (cereals and vegetal minerals, timber, etc.) ....
  Public land—
    Commissioner, report of..........
    How to secure titles...............
    Leases.............................
    Provisions for, by constitution....
  Pueblo and Jicarilla Indians, repor agent ....
  Pueblo Indian—
    Divisions of.......................
    Flour mills for.....................
    Houses of.........................
    Laguna reservation ....
    Missionaries to.....................
    Population ....
    Produce and live stock statistics .
    Schools ....
    Statistics of deaths and defec classes ....
  Railroads—
    Account of (with list)............
    Effect of, on growth of country...
    New construction in 1899.........
    Proposed extension...............
  Report of the governor for the year (ing June 30, 1900....................
  Resources of..........................
  Rio Arriba County—
    Coal mines in.....................
    Mining in (lead, gold, silver, cop coal)............................
    Schools in ....
    Situation and extent ....
    Valuation of......................
  Rocky Cliff coal mine, inspector's rep
  Roswell, county seat of Chaves Count
  San Juan County—
    Price of land in ....
    Products of.......................
    Resources of......................
    Situation and extent of ....
    Water supply of ....

Page.

New Mexico—Continued.
- Sulphur deposits in 402
- Superintendent of public instruction, report of 178
- Supreme court, report of business of 259
- Taos County—
  - Mining in 564
  - Resources of 563
  - Taos Valley and Taos health resorts 342
- Territorial bonds at a premium 145
- Territory funds, where deposited 278, 279, 280, 282
- Territory library, report of librarian 300
- Thatcher coal mine, inspector's report 412
- The adobe "palace" at Santa Fe 480
- The Elephant Buttes Dam 508
- "The palace" in Santa Fe, present uses of 172, 176
- The United States commission to select lands for institutions 171
- Tiena Amarilla, county seat of Rio Arriba County 532
- Timber and lumber in 368
- Tobacco in 376
- Treasurer's quarterly statements 277
- Treasurer's report 272
- Tularosa, Otero County, climate of, as health resort 530
- Union coal mine, inspector's report 418
- Union County—
  - Coal in 566
  - Cost of living 566
  - Homestead entries in 566
  - Live stock 565
  - Population of 567
  - Railroads in 566
  - Schools of 566
  - Situation and extent 565
  - Towns and villages of 565
- United States Indian Industrial School at Santa Fe, report of superintendent 240
- United States land offices, statement of business of 271
- United States land office fees on selection account 176
- University—
  - Account of 209
  - At Albuquerque 489
  - Buildings 213
  - Enrollment in 209
  - Faculty of 212
  - Geological work by 209
  - Laboratory 210
  - Statistics for year 1898-99 181
- Valencia County—
  - Coal, onyx, copper, gypsum, gold, and silver in 568
  - Farming, crops, and stock in 568
  - Schools in 567
  - Situation and extent of 567
- Vegetables and fruits in 367
- Ventilation of coal mines. *See under* Various mines, inspector's reports.
- Woman's Board of Trade of Santa Fe 547
- Wool—
  - Clips, yield of 465
  - Improvement in 464
  - Production 464
  - "Pulling" plants in 466
  - Scouring mills in 465

O.

Oklahoma:
- Agricultural and Mechanical College 590
- Agricultural exhibits, prizes 674
- Agricultural experiment station 635
- Altitudes in 580
- Alva district, entries in 612
- Area of 579
- Asphalt in 685
- Assessed value of farm lands per acre 583
- Banks in, statements of 615
- Baptist college in 595
- Blind, the, institution for 607
- Board of health 658
- Broom corn in 640
- Building and loan associations 616
- Building stone in 655
- Castor-bean crop 641

Page.

Oklahoma—Continued.
- Catholic college in 595
- Cement in 655
- Church statistics in 604
- Cities in, statistics of 665
- City district, area of 610
  - Homestead entries in 610
- Climate of (tables) 632, 659
- Colored organizations in 606
- Commerce, flour, cotton, cattle, grain, etc. 628
- Congregational college in 595
- Copper in 654
- Corn crop of 638
- Cotton crop 639
- Counties, description of 667
- Court business, report of 662
- Crimes and punishments, statistics 664
- Deaf and dumb, institute for 607
- Enid district, area of and homestead entries in 611
- Farming in, of various kinds 636
- Farm lands, prices and sales of 642
- Farm produce 642
- Flour mills in 657
- Fraternal organizations in, statistics 606
- Fruits, variety tests of (experiment station) 645
- Fuel and lumber in 657
- Geographical situation, climate 580
- Geology and natural history of 652
- Grain elevators in. 651
- Grasses of 639
- Guano in 655
- Guthrie land district, area of, and homestead entries in 610
- Gypsum in 653
- Homesteads in 582
- Horticulture in 644
- Indemnity lands in 598
- Indian industrial school in 596
- Indian population 676
- Indian schools in 596
- Indians sane, progress of, agents' reports. 677
- In asylums 608
- Insurance companies, statistics of business 617
- Interest on investments 619
- Investments, Territorial warrants 618
- Irrigation in 651
- Jesuit college in 595
- Kaffir corn in 640
- Kingfisher land district, area of, and homestead entries in 611
- Labor conditions in 658
- Lands filed on, and lands still vacant 614
- Langston University for colored people 594
- Leases, proceeds of, for public buildings. 599
- Legislation needed regarding land 603
- Live stock in, assessment 649
- Mangum district, entries in 612
- Manufactures of 656
- Medical practice, certificates for, necessary 659
- Melon crop 641
- Mexican land grant 671
- Military forts in 671
- National guard of 672
- Newspapers in, list of 660
- Normal school 591
- Northwestern Normal School 592
- Oat crop 639
- Official register 675
- Oil and gas in 654
- Peanut crop 641
- Perry land district, area of 611
- Population 578, 580
- Potatoes 642
- Productions of 578
- Prosperity of 578
- Public buildings 665
- Public credit of 620
- Public lands in, acres of 609
- Railroad freight of different roads, statistics of 628
- Railroads in, assessed value of 621
- Railways chartered during year ending June 30, 1900 627
- Railway improvements in (statistics) 624
- Railways in 620

Page.

- Oklahoma—Continued.
  - Report of governor of 577
  - Quaker schools in 595
  - Salt in 653
  - School census, statistics, teachers, etc. (tables) 585
  - School funds, apportionment of 602
  - Schools in, character of 583
  - School land department:
    - Receipts and expenditures of 600
    - Work of 599
  - School lands in, leases of 596
  - Social and religious condition of 603
  - Statehood urged 686
  - Taxable valuation 578, 581
  - Telegraph and telephone service in 631
  - Territory indebtedness 583
  - Territory library 661
  - Territory taxes 583
  - University of 588
  - University organization 589
  - Vacant land in 613
  - Value of lease of school lands per capita. 599
  - Wheat crop in 637
  - Wine industry in 648
  - Woodward district, homstead entries in .. 612
- Otero, Miguel A., governor of New Mexico, report 133

P.

- Petroleum (*see under* New Mexico, Colfax County) 498
- Plumbago (*see under* New Mexico, Colfax County) 498
- Porto Rico, acreage of cultivated and uncultivated lands 742
  - Agriculture backward in 738
  - American school teachers:
    - Number of 749
    - Salaries of 751
  - Anæmia of natives, cause of 731
  - Area of cultivated lands in 739
  - Board of charities of:
    - Organization of 733
    - Report of 733
  - Board of health:
    - Investigations by 730
    - Licenses under 730
    - Report of 729
  - Board of public works, report of 722
  - Bureau of agriculture and mines, report of 738
  - Cane (sugar) lands in, area of 739
  - Charitable institutions:
    - Condition of 735
    - Tabular statement 736
  - Charity school buildings repaired 734
  - Coffee lands in, area of 739

Page.

- Porto Rico—Continued.
  - Course of study in the San Juan school ... 763
  - Crown lands in 716
  - Contracts for road and bridge building ... 725
  - Department of the interior, organization of 714
  - Education in, report of commissioner 746
  - Effects of hurricane of 1899 on health 731
  - Effect of hurricane on coffee and sugar crops 740
  - English supervisors of schools 748
  - Fajardo normal school in 754
  - Free public library 760
  - Gold placers in 740
  - Harbor works in 728
  - High death rate in 731
  - Insane asylum, condition of 734
  - Instruction in agriculture defective 739
  - Iron ore in 740
  - Land grants in 715
  - Land titles, confusion of records of 715
  - Leper colony in 734
  - Lepers in 732
  - Library and museum in San Juan 760
  - Mineral resources of 740
  - Mining claims, list of 741
  - New schools opened in 748
  - Public buildings in, list of 727
  - Public lands, classification and extent of 716, 718
  - Public works:
    - Reorganized under American rule ... 722
    - Under Spanish rule 722
  - Pupils from, in American institutions 761
  - Report of commissioner of the interior of . 714
  - Roads in 716
  - Roads and bridges in, statistics of 724
  - Registration of patent medicines in 730
  - Salt works in 740
  - School books for 758
  - School laws of, criticised 747
  - School statistics (tables) 767
  - School supplies for 759
  - Summary of school statistics 762
  - Summer schools in 753
  - Superior board of health, organization of . 729
  - Teachers, pension fund for 759
  - Tobacco lands in, area of 739
  - Want of school buildings in 756
- Pueblo Indians (*see under* New Mexico).

R.

- Railways in Arizona, valuation of 77, 78

T.

- Temperatures of American cities compared .. 340

O